

MGG 09005073

Laboratory Item 359

A SUMMARY OF ENGINEERING PROPERTIES, SEDIMENT SIZE, AND
COMPOSITION OF A CORE FROM LAKE SENECA, NEW YORK.

Engineering Properties
Prepared by:
Eugene V. Achstetter

Size & Composition
Prepared by:
Eugene V. Kelly
Cary M. Ross

December 1968

Geological Laboratory-Laboratories Branch
Nearshore Surveys Division
Oceanographic Surveys Department

U. S. Naval Oceanographic Office
Washington, D. C. 20390

CORE DESCRIPTION SHEET

NAVOCEANO-3167 '63 (3-68)

SAMPLE NO. BS-1

LOCATION: LAKE SENECA - N.Y. SAMPLER TYPE: MODIFIED EWING

LATITUDE 42° 41.5' N WATER DEPTH (M): 30.5

LONGITUDE 76° 56.5' W CORE LENGTH (CM): 504

DATE CORED (D,M,Y): OCTOBER 21 1968

CORE PENETRATION (CM): 504

LOGGED BY: ACHSTETTER & KRAUTZ

ITEM NO: 359

DATE LOGGED IN (D,M,Y): 5-25 NOV 68

REMARKS: (Odor, bedding, shells, structures, mottling, disturbance, etc.)

DEPTH (CM)

CORE SKETCH

COLOR (GSA)

LAB. NO.

SAMPLE INTERVAL (CM)

SEDIMENT TYPE (Visual)

CORE RECEIVED AS THREE SECTIONS. (A-B-C)

EXCESSIVE WATER ON TOP OF EACH SECTION.

SECTION "A": 0 - 186 CM.

FAINT MOTTLING? 0 - 15 CM.

CHEVRON VARVES. 15 - 36 CM.

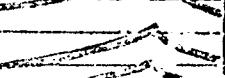
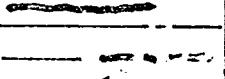
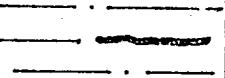
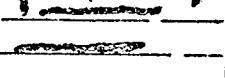
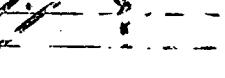
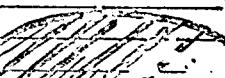
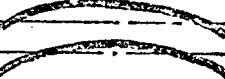
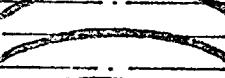
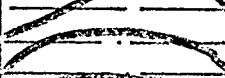
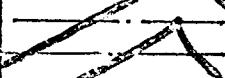
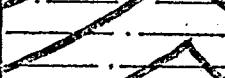
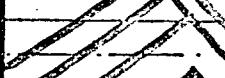
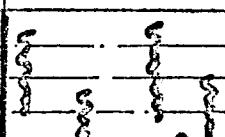
STANDARD ALTERNATING LAYERS (VARVES?) 36 - 60 CM.

FAINT LAMINAe, 60 - 75 CM.

LIGHT MOTTLING. 60 - 77 CM.

LOW DENSITY SPINNERS (CRACKS?) 77 - 100 CM.

CHEVRON TYPE VARVES? 90 - 100 CM.



CORE DESCRIPTION SHEET

NAVOCANO 3167 '93 (2.68)

3

SAMPLE NO. BS-1

LOCATION LAKE SENSAC, N.Y.

SAMPLER TYPE: MODIFIED EWING

LATITUDE 42° 41.5'

'N WATER DEPTH (M): 30.5

LONGITUDE 76° 56.5'

'E CORE LENGTH (CM): 504

DATE CORED (D,M,Y): OCTOBER 1968

CORE PENETRATION (CM): 504

LOGGED BY A. H. STETTER & KRAUNZ

ITEM NO: 359

DATE LOGGED IN (D,M,Y): 5.25 Nov. 68

REMARKS: (Odor, bedding, shells, structures, mottling, disturbance, etc.)

DEPTH (CM)

CORE SKETCH

COLOR (GSA)

LAB. NO.

SAMPLE INTERVAL (CM)

SEDIMENT TYPE (Visual)

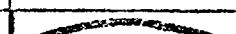
STANDARD ALTERNATING

LAYERS (VARVES?) 100-240 CM.

COLOR CHANGE @ 108 CM.

GRAINS APPEAR TO FLOAT
WHEN DISTURBED. (DARK CONDITION)

110



SY4/1

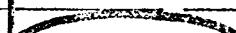
OLIVE GRAY

359-1

100-108

SILT

120



SY5/2

359-2

108-116

SILT

130



SY4/1

OLIVE GRAY

359-3

116-124

SILT

140

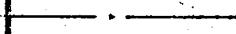


359-4

124-132

SILT

150



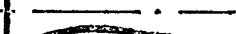
160



170

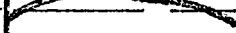


180

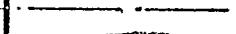


LIPST. ON "B" 183-363 CM.

190



200



CORE DESCRIPTION SHEET

NAVOCET ADO 3167 192 (3-68)

SAMPLE NO. TSS-1

LOCATION LAKE SENECA, N.Y. SAMPLER TYPE: MODIFIED ECKING

LATITUDE 42° 41.5' N WATER DEPTH (M): 30.5

LONGITUDE 76° 56.5' E CORE LENGTH (CM): 504

DATE CORED (D.M.Y): OCTOBER 1968

CORE PENETRATION (CM): 504

LOGGED BY ARCHER, ERICKSON & KRAVITZ

ITEM NO: 359

DATE LOGGED IN (D.M.Y): 5-25-68

REMARKS: (Odor, bedding, shells, structures, mottling, disturbance, etc.)	DEPTH (CM)	CORE SKETCH	COLOR (GSA)	LAB. NO.	SAMPLE INTERVAL (CM)	SEDIMENT TYPE (Visual)
						SILT
	310					
FINE SILT STRINGERS? 315-319 CM. COLOR CHANGE @ 318 CM. LAYERING MUCH MORE SHARPLY DEFINED ON THE RADIOGRAPH. THIN SHARPLY DEFINED LOW DENSITY LAYERS AND THICKER HIGH DENSITY LAYERS, 319-340 CM.	320		10YR4/1 DARK YELLOWISH BROWN	359-14	318-326	
	330				359-15	326-334
	340				359-16	334-340
APPARENT CHANGE IN SEDIMENT, 341 CM. COLOR CHANGE @ 341 CM. MARBLING (MOTTLING?) BIOTURBATION? 341-427 CM.	350		10YR5/2 PALE TO DARK YELLOWISH BROWN	359-7-8	341-344	CLAYEY SILT TO CLAY
There is no sample 359-9	360				359-9	349-357
SECTION "C" 312-364 CM.	370				359-10	357-363
TOP 20' DENSE MATERIAL EPERBLE? @ 371 CM.	380					
	390					
	400					

6

EXPLANATION OF DATA PAGES
CORE ANALYSIS SUMMARY SHEET
Engineering Properties
NAVOCEANO (EXP) 3167/18B (Rev. 1-63)

Results of engineering properties, core analysis performed by the U. S. Naval Oceanographic Office Geological Laboratory are recorded on Core Analysis Summary Sheet Engineering Properties.

The following is a description of the terms employed on the Core Analysis Summary Sheet:

1. Cruise Number. A number assigned to each cruise for identification purposes.
2. Latitude. Expressed in degrees, minutes, and seconds.
3. Longitude. Expressed in degrees, minutes, and seconds.
4. Sample Number. A consecutive number, commencing with 1 applied to each core taken successively throughout the cruise.
5. Date Taken. Day (GMT), month, and year.
6. Water Depth (m). The uncorrected sonic sounding recorded in meters.
7. Type Corer. Identified by the name of device employed.
8. Core Length (cm). Recorded in centimeters as observed in the laboratory.
9. Core Penetration (cm). Recorded in centimeters as observed in the field.
10. Subsample Depth in Core (cm). Interval of subsample as measured in centimeters from the top of the core.
11. Wet Unit Weight (g/cm³). The weight (solids plus water) per unit volume of the sediment mass.
12. Specific Gravity of Solids. The ratio of weight in air of a given volume of a sediment at 20°C to the weight in air of an equal volume of distilled water at 20°C.
13. Water Content (% dry weight). The ratio, in percent, of the weight of water in a given mass of the sediment sample to the weight of the solid particles.
14. Void Ratio. The ratio of the volume of void spaces to the volume of solid particles in the sediment sample as computed from Wet Unit Weight, Specific Gravity of Solids, and Water Content.

15. Saturated Void Ratio. The Void Ratio at 100 percent saturation as computed from Water Content and Specific Gravity of Solids.

$$\text{Saturated Void Ratio} = \frac{\text{Water Content} \times \text{Specific Gravity of Solids}}{100}$$

16. Porosity (%). The ratio, usually expressed as a percentage, of the volume of voids of a sediment mass to the total volume of the sediment mass.

17. Liquid Limit. Water Content, in percent, at which a pat of sediment cut by a groove of standard dimension will flow together for a distance of 1/2 inch under the impact of 25 blows in a standard liquid limit apparatus.

18. Plastic Limit. Water Content, in percent, at which a sediment will just begin to crumble when rolled into a thread approximately 1/8 inch in diameter.

19. Plasticity Index. The numerical difference between the Liquid Limit and Plastic Limit of the sediment mass.

20. Liquidity Index. The ratio, expressed in percentage, of (1) the natural water content of the sediment sample minus its Plastic Limit to (2) its Plasticity Index.

21. Compression Index. The slope of the linear portion of the Pressure-Void Ratio curve on a semi-log plot.

22. Compressive Strength. The load per unit area required to shear an unconfined, natural or remolded, sediment mass.

23. Cohesion. The shearing strength per unit area under zero externally applied load.

24. Sensitivity. The ratio of the natural to the remolded strength. It is a measure of the loss of strength due to remolding the sediment mass.

25. Angle of Internal Friction ($^{\circ}$). The angle between the abscissa and the tangent of the curve representing the relationship of "shearing resistance" to "normal stress" acting within a sediment mass.

26. Activity. The ratio of the Plasticity Index to the clay fraction percentage (<.002mm) of the sediment mass.

27. Modulus of Elasticity. The ratio of stress to strain of the sediment mass.

28. Slump (%). The ratio, in percent, of the amount of height change immediately before the compressive strength test to the original height of a cylinder of sediment.

CORE ANALYSIS SUMMARY SHEET ENGINEERING PROFESSIONAL

THE IRVING JOURNAL OF ENGINEERING PROFESSIONS

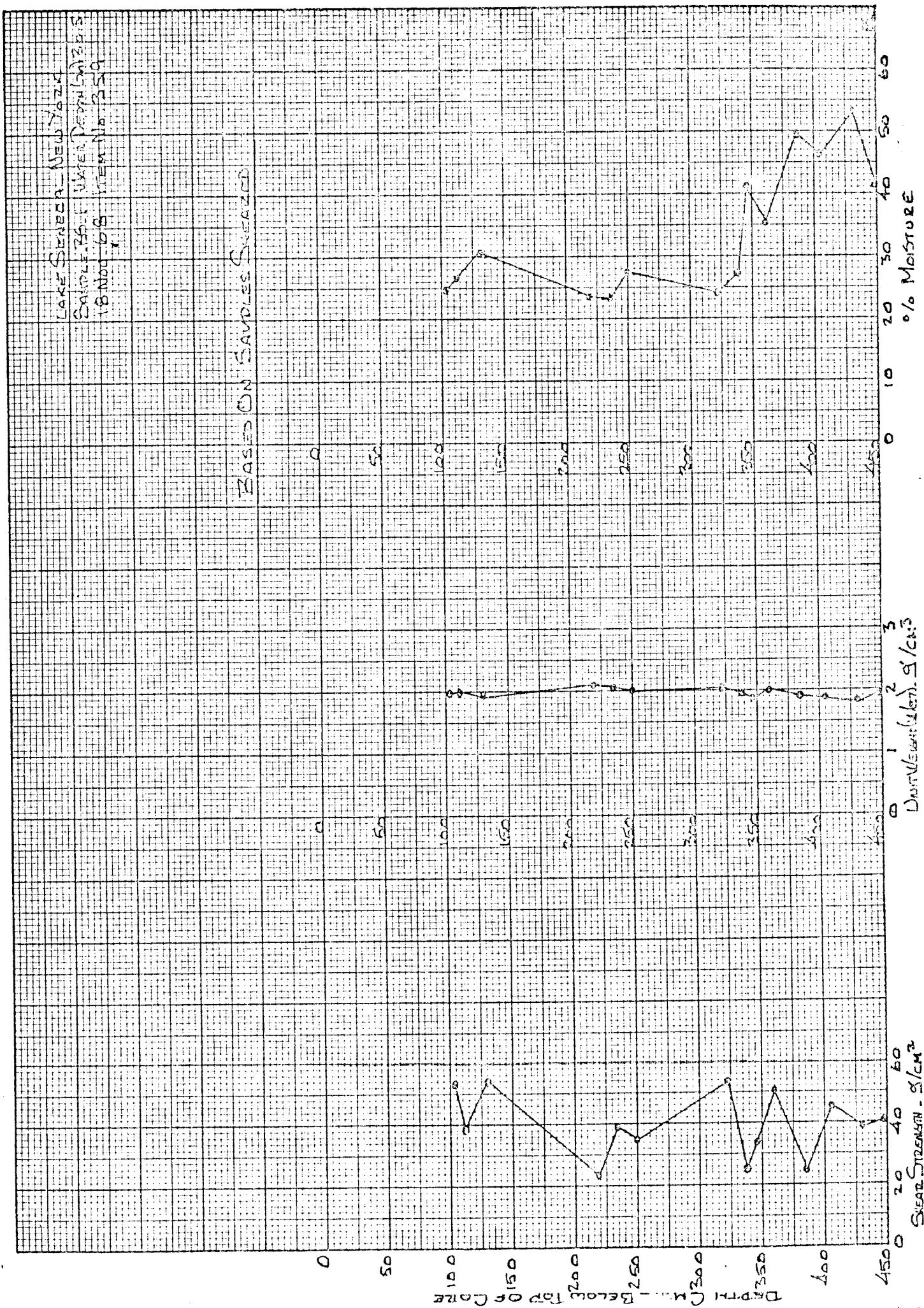
ANALYZED BY E. A. HESTER

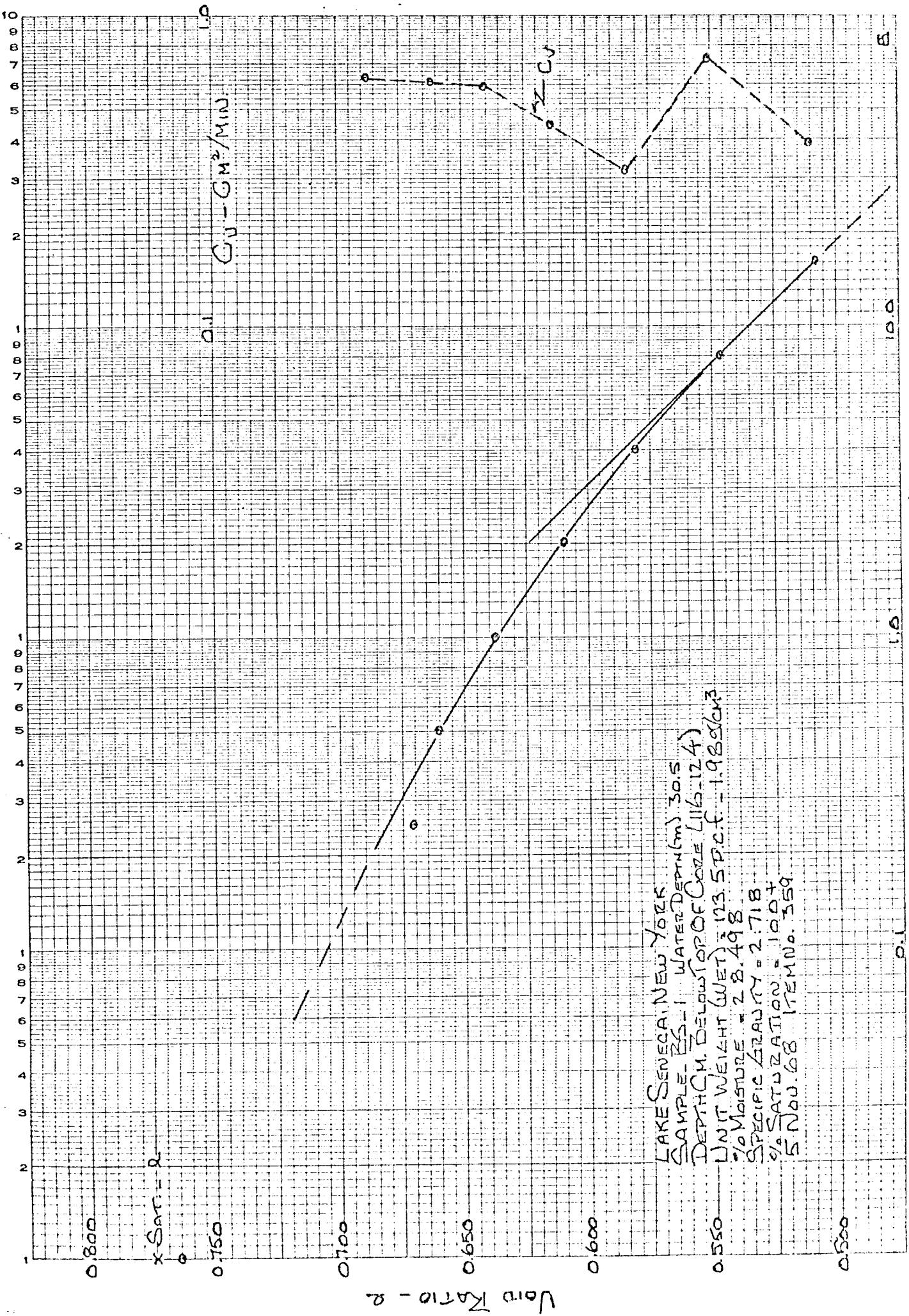
CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

ANALYZED BY E. ACHSTETTE '72
DATE 5 Nov. - 25 Nov. 68

1. CRUISE NO. LAKE SENECA, NEW YORK	4. SAMPLE NO.	TS-1	7. T-T CORE LENGTH (cm)	504
2. LATITUDE 42° 41.5' N	5. DATE TAKEN (Day, month, year)	OCTOBER 1968	8. CORE LENGTH (cm)	504
3. LONGITUDE 76° 56.5' E	6. WATER DEPTH (m)	30.5	9. CORE PENETRATION (cm)	504
10. SUBSAMPLE DEPTH IN CORE (cm)	326.334	334.346	341.349	357.363
11. WET UNIT WEIGHT (g/cm^3)	(1.94)	(1.94)	(1.88)	(1.74)
12. SPECIFIC GRAVITY OF SOLIDS	2.70	2.72	2.76	2.75
13. WATER CONTENT (%) dry weight	26.57	27.21	42.80	35.34
14. VOID RATIO	0.692	0.719	1.237	0.848
15. SATURATED VOID RATIO	0.718	0.739	1.193	0.963
16. POROSITY (%)	40.90	(42.50)	54.69	(49.06) (57.63)
17. LIQUID LIMIT		37.2	26.7	36.0
18. PLASTIC LIMIT	2	21.4	16.1	21.4
19. PLASTICITY INDEX	0	15.8	10.6	7
20. LIQUIDITY INDEX	4	135.4	314.8	148
21. COMPRESSION INDEX FROM LL	C	0.24	0.15	0.22
22. COMPRESSIVE STRENGTH NATURAL REMOULD	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)
23. COHESION NATURAL REMOULD	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)	(kg/cm^2)
24. SENSITIVITY	C	25.2	33.7	50.5
25. ANGLE OF INTERNAL FRICTION (ϕ)	33.5	33.0	32.0	33.0
26. ACTIVITY	4	—	1.6	—
27. MODULUS OF ELASTICITY				
28. SLUMP (S)				
29. REMARKS ()	RECOMPACTED ASSUMING SEDIMENT IS 100% SATURATED IN-SITU. ATTENDA24 LIMITS PERFORMED ON NATURAL MATERIAL			

ITEM NO. 359
SHEET 2 OF 2

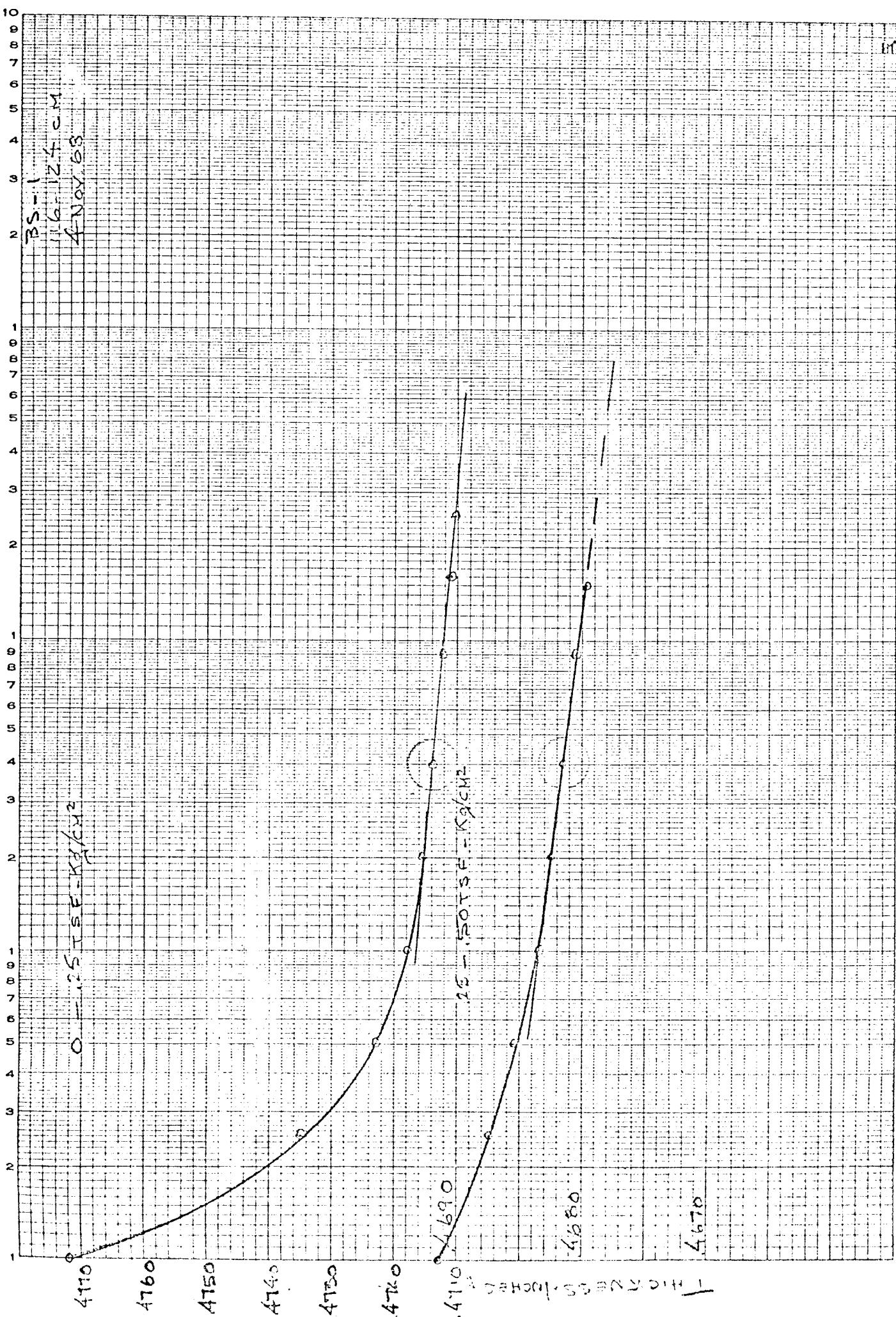




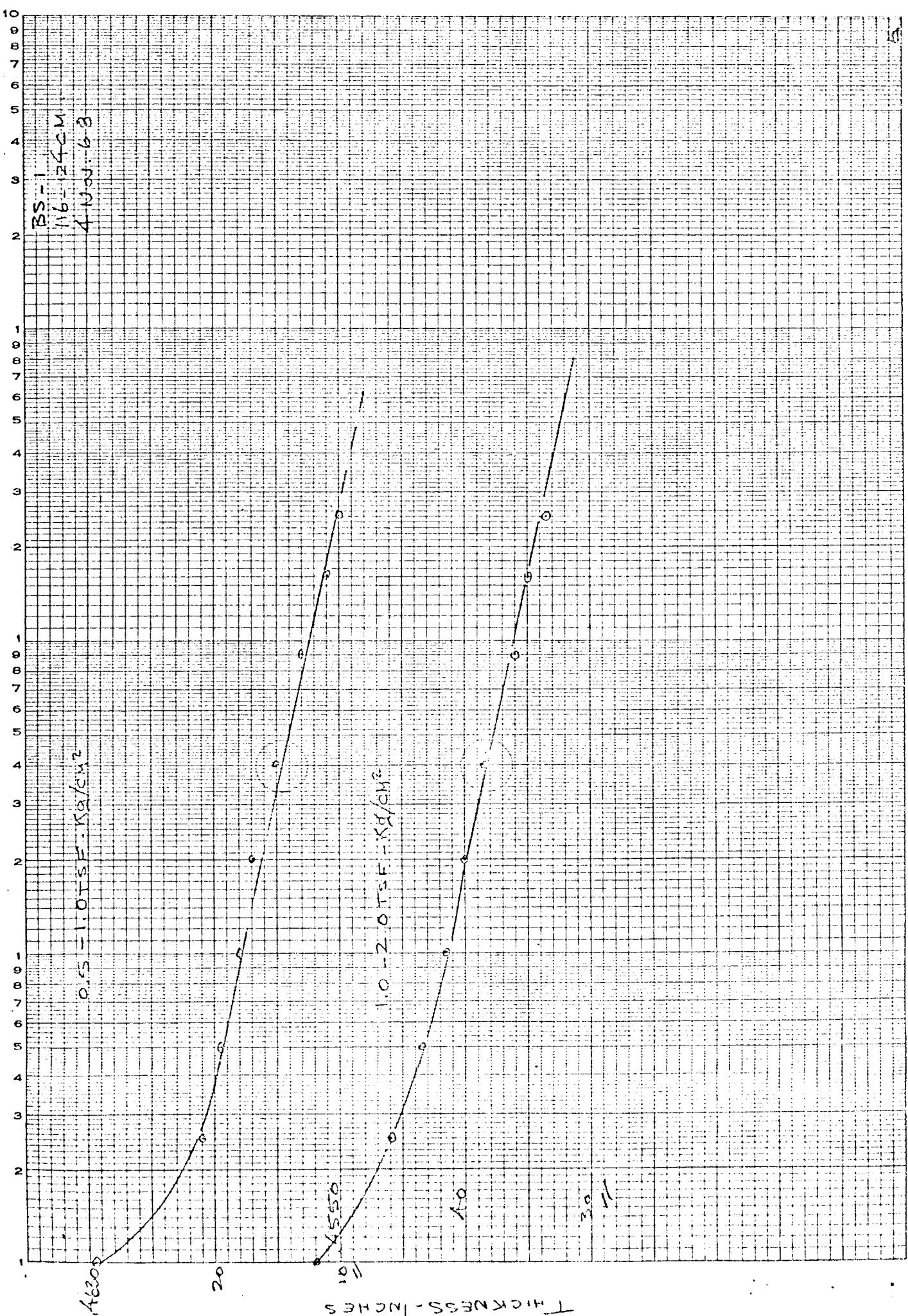
LAKE SENECA, NEW YORK
 SAMPLE ES-1 WATER DEPTH (m) 30.5
 DEPTH (m) DEELOWSTOP OF Core (116-124)
 UNIT WEIGHT (WET) 123.5pcf - 1.98cm³
 % MOISTURE = 28.498
 SPECIFIC GRAVITY = 2.718
 % SATURATION = 100+
 5 Nov. 68 ITEM NO. 359

PRESSURE, TONS/FT² AS KG/cm²

5

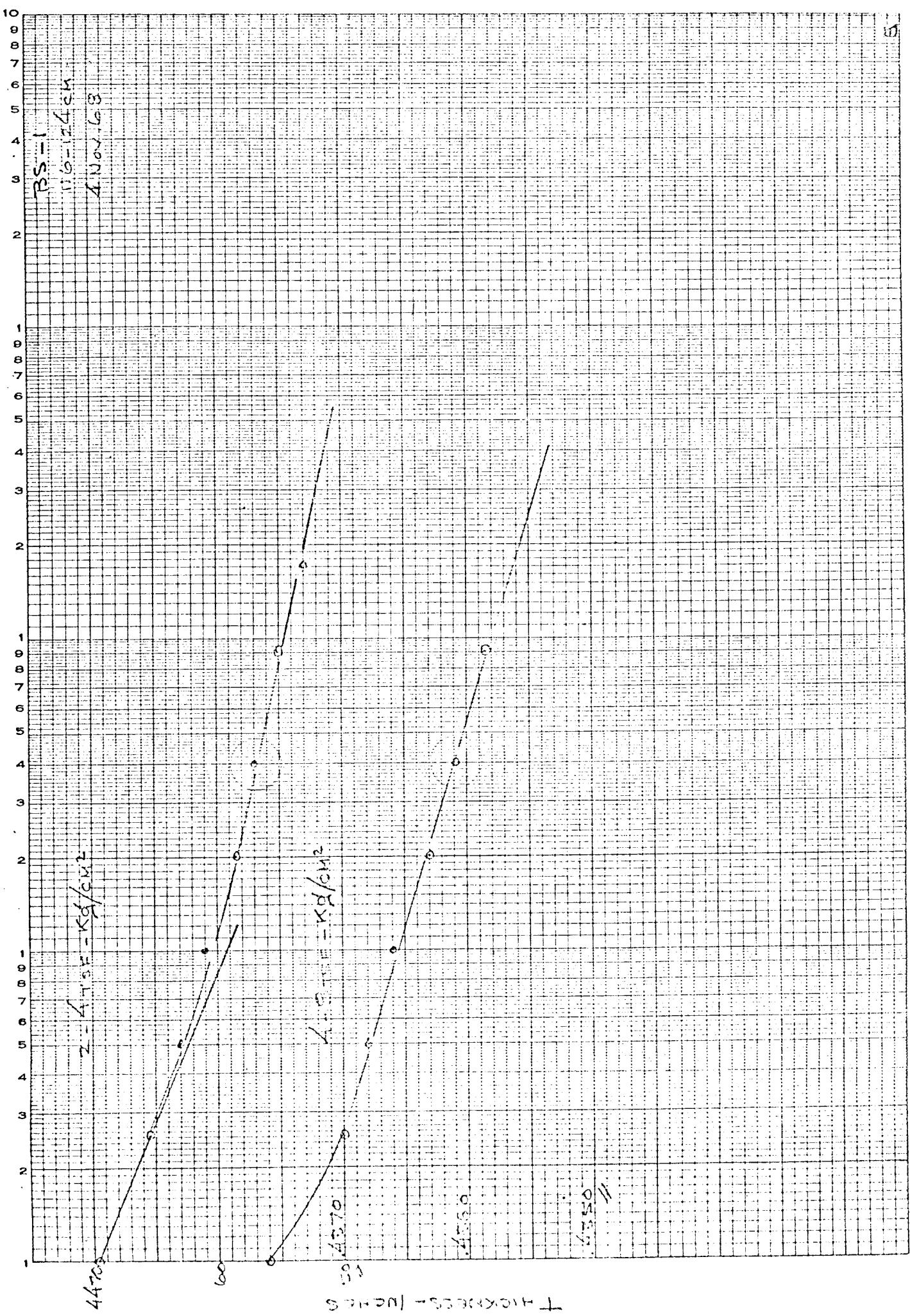


TIME - MINUTES



三

TIME-MINUTES



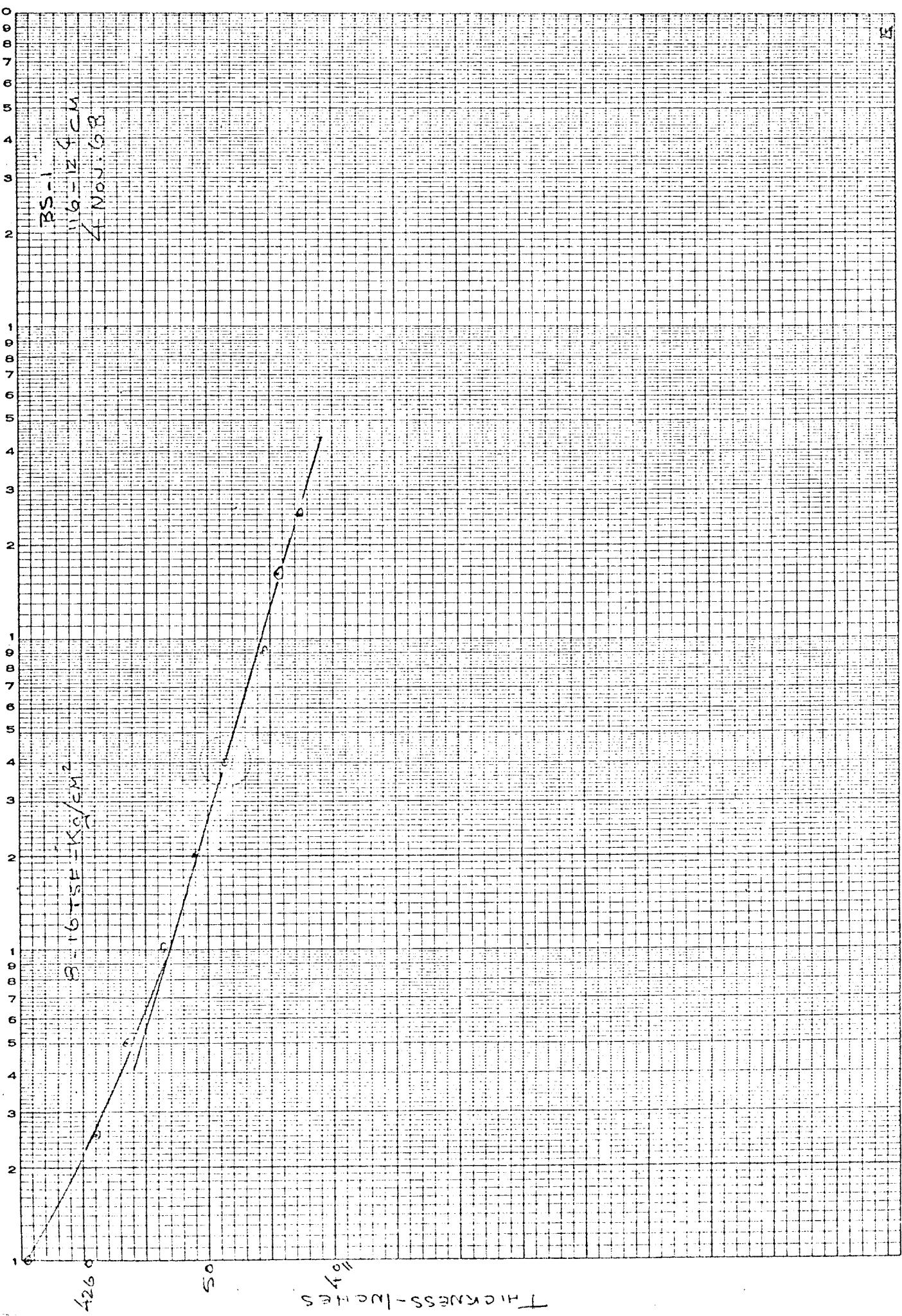


FIG. 349-LINE CHITZGEN GRAPH PAPER
EMIL ITTMAN
4 CYCLES X 10 VIBRATIONS PER INCH.

HICINESS-HICNESSES

卷之三

13 x 104 C 3/4 INCH SLEEVES 20.

$$.4805 \text{ ft} = .4805''$$

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.4780

4710

476c

415

4

470

4750

,4920

670

1

4

1

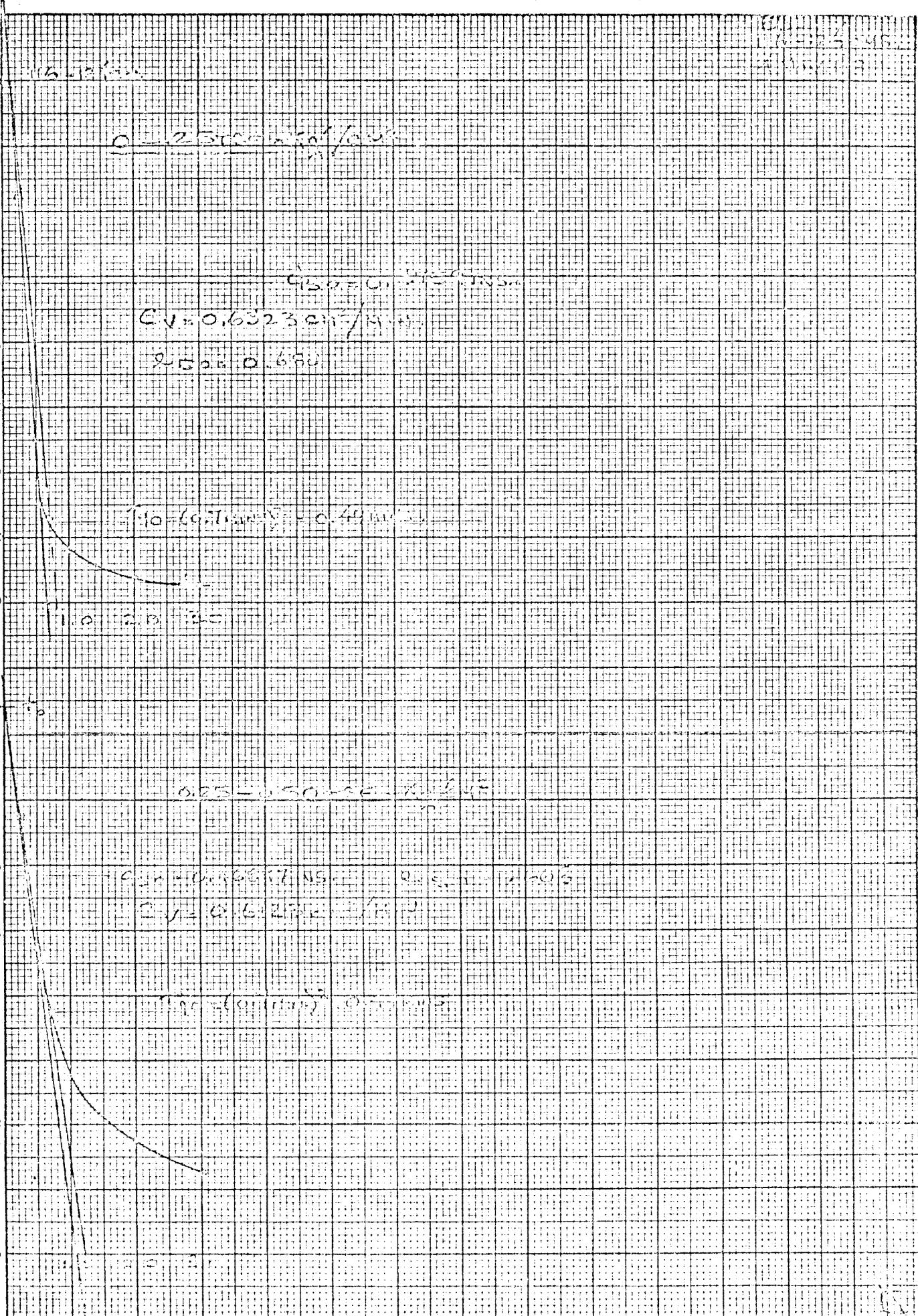
58

84

62

80

78



K E U F F E L & S S C O. 10 TC $\frac{1}{2}$ IN MADE IN U.S.A.

359 THICKNESS - INCHES

4630

28

26

24

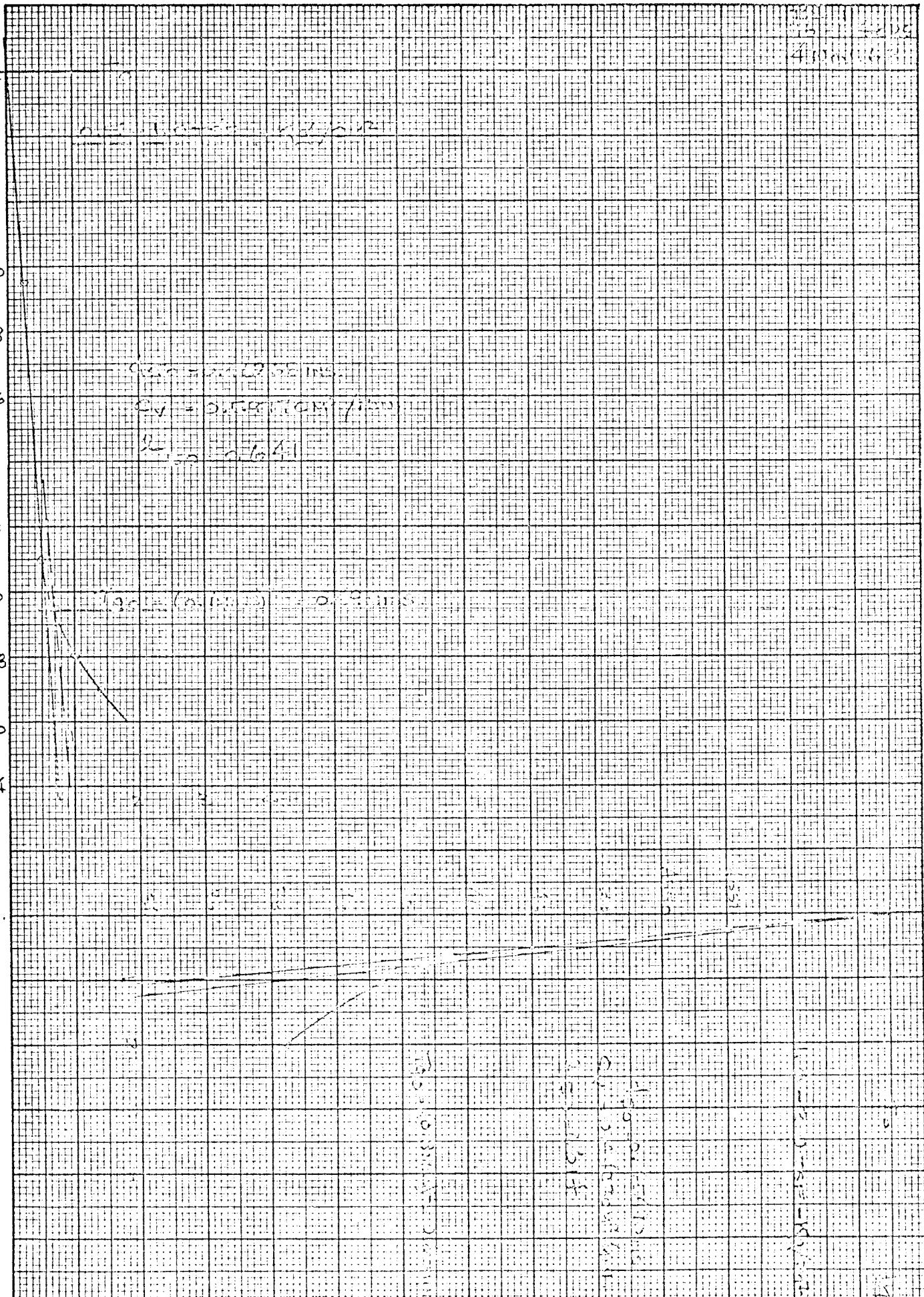
22

20

18

16

14



Time - Minutes

CONVOTEC INC.
CO., DIV.

THICKNESS - INCHES

.4170

.68

.66

.64

.62

.60

.58

.56

250 0.4170 in.

500 0.68 in.

1000

10.02

20.04

30.06

40.08

50.10

60.12

70.14

80.16

90.18

100.20

110.22

120.24

130.26

140.28

150.30

160.32

170.34

180.36

190.38

200.40

210.42

220.44

230.46

240.48

250.50

260.52

270.54

280.56

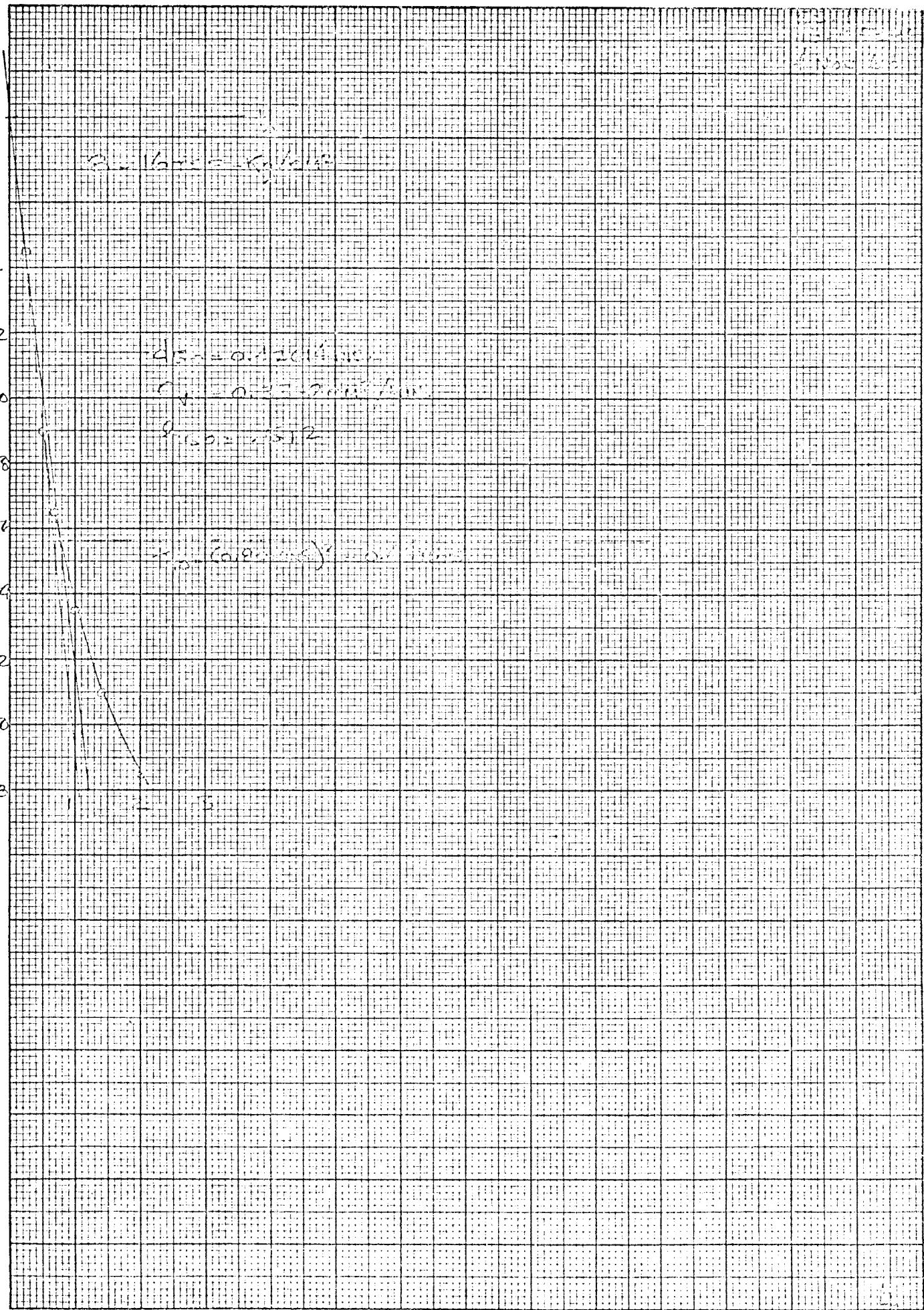
290.58

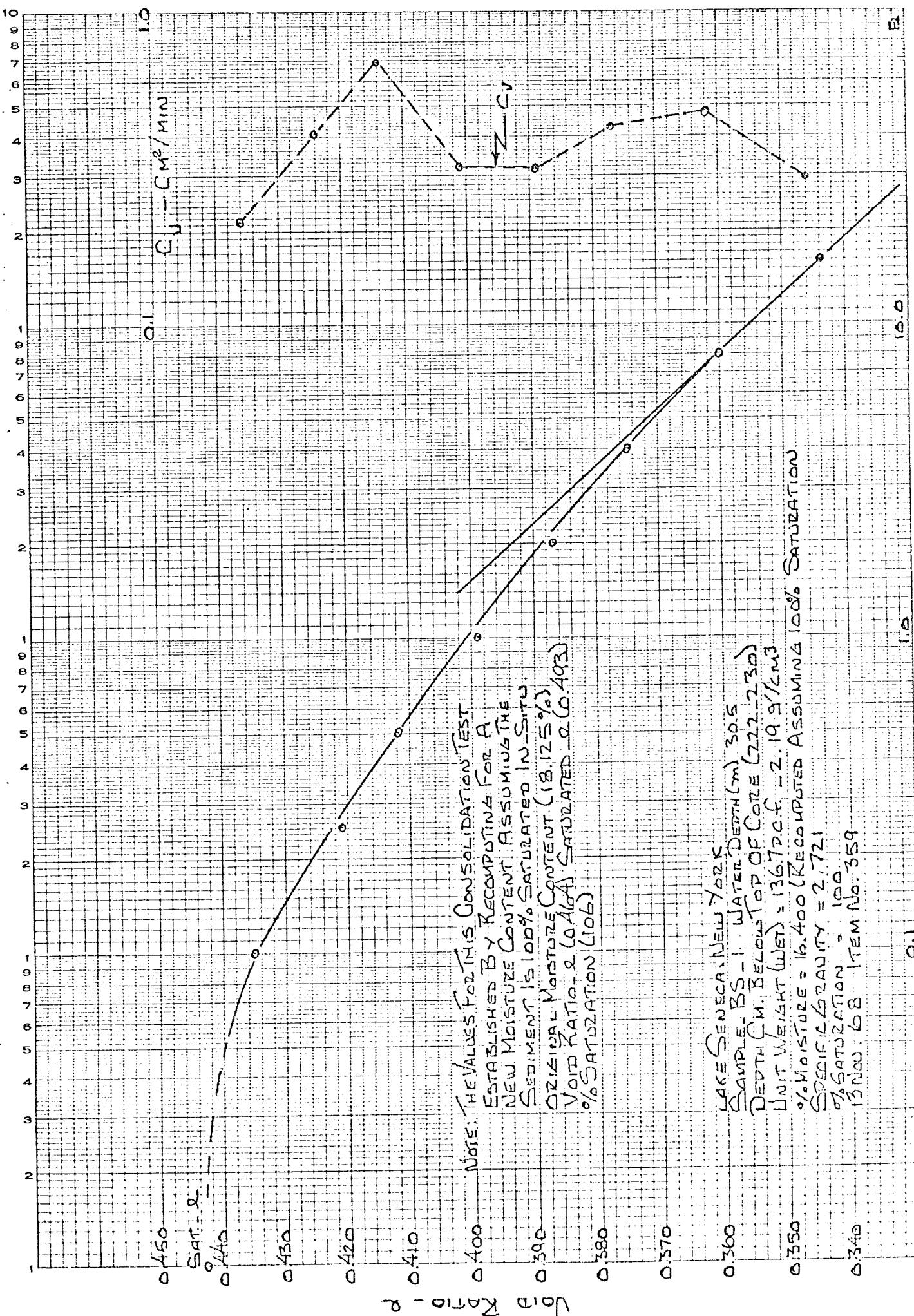
300.60

V TIME - Minutes

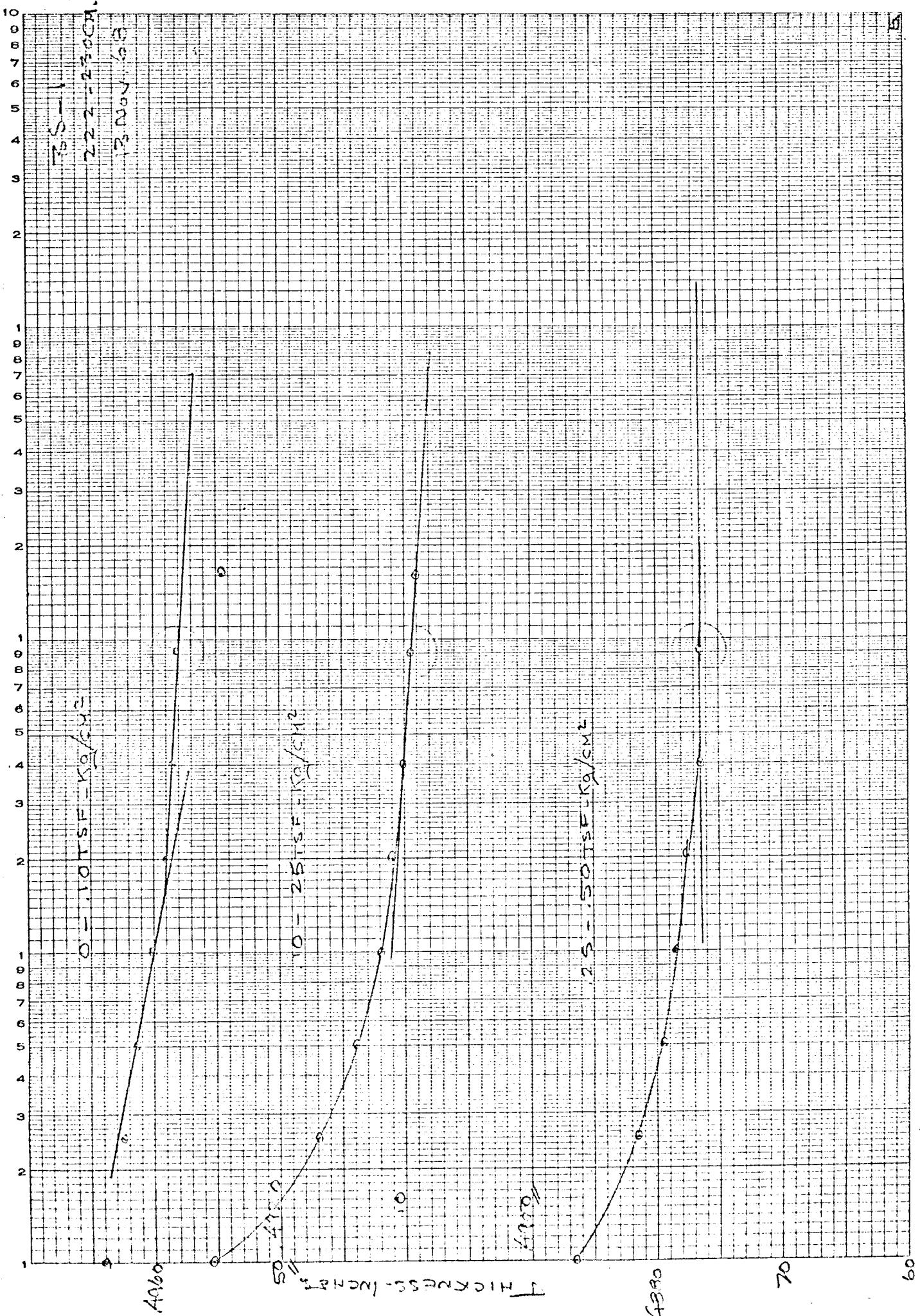
THICKNESS - INCHES

.4264
62
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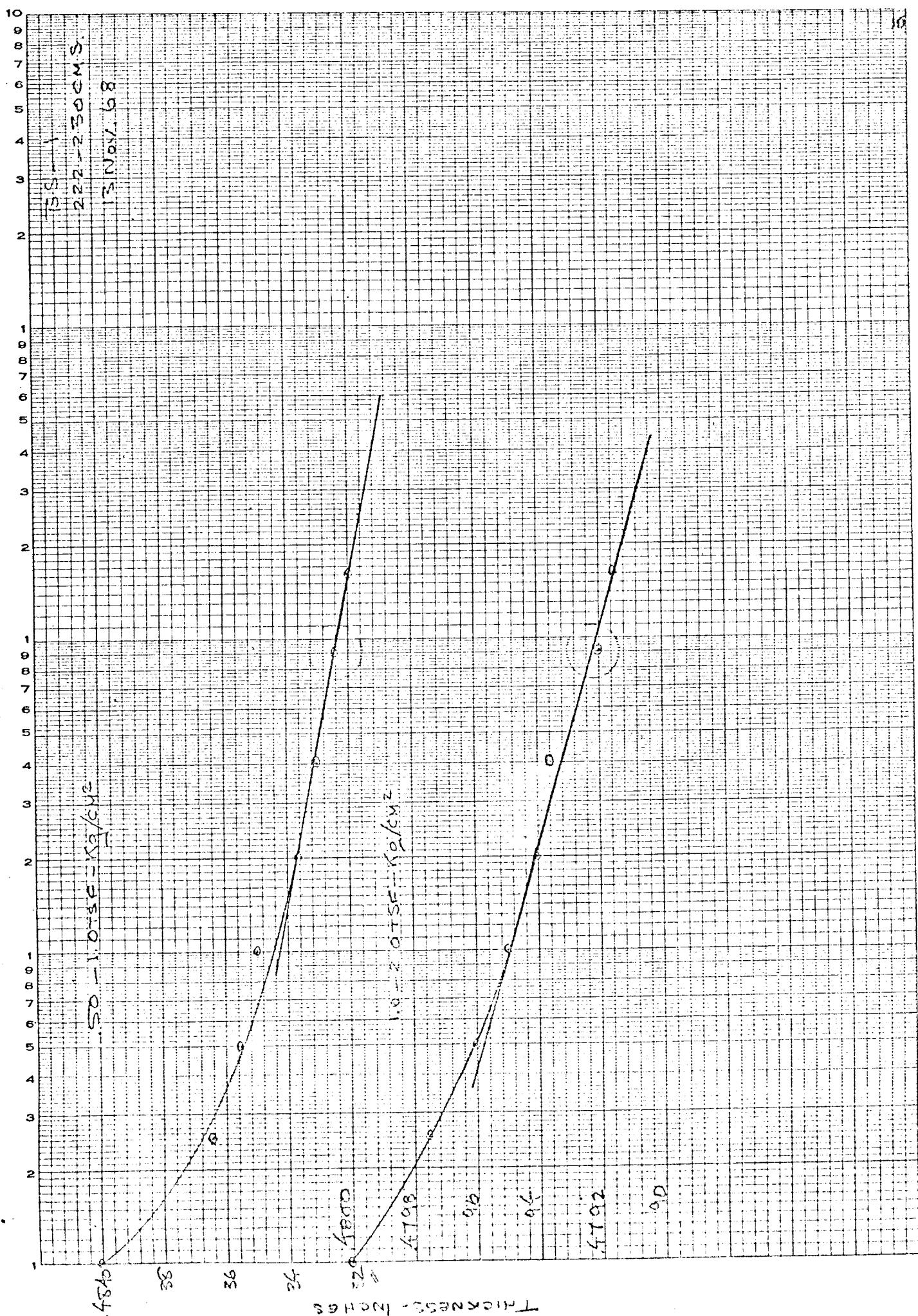
PRESSURE, TONS / FT² IN KSI/CM²

TIME - MINUTES

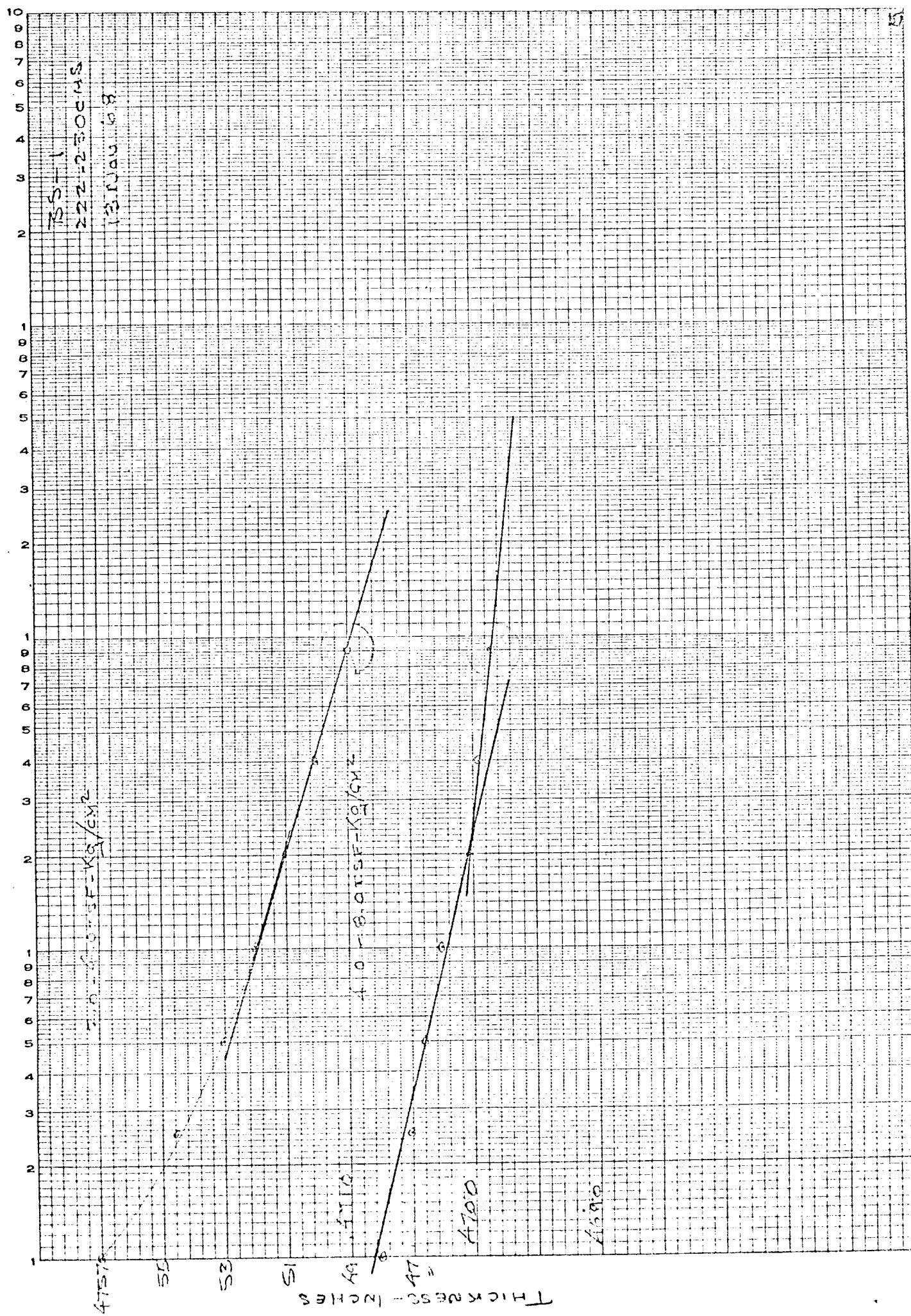


EUGENE DICTATION ETC.

100% RECYCLED 100% POST-CONSUMER RECYCLED
100% RECYCLED 100% POST-CONSUMER RECYCLED



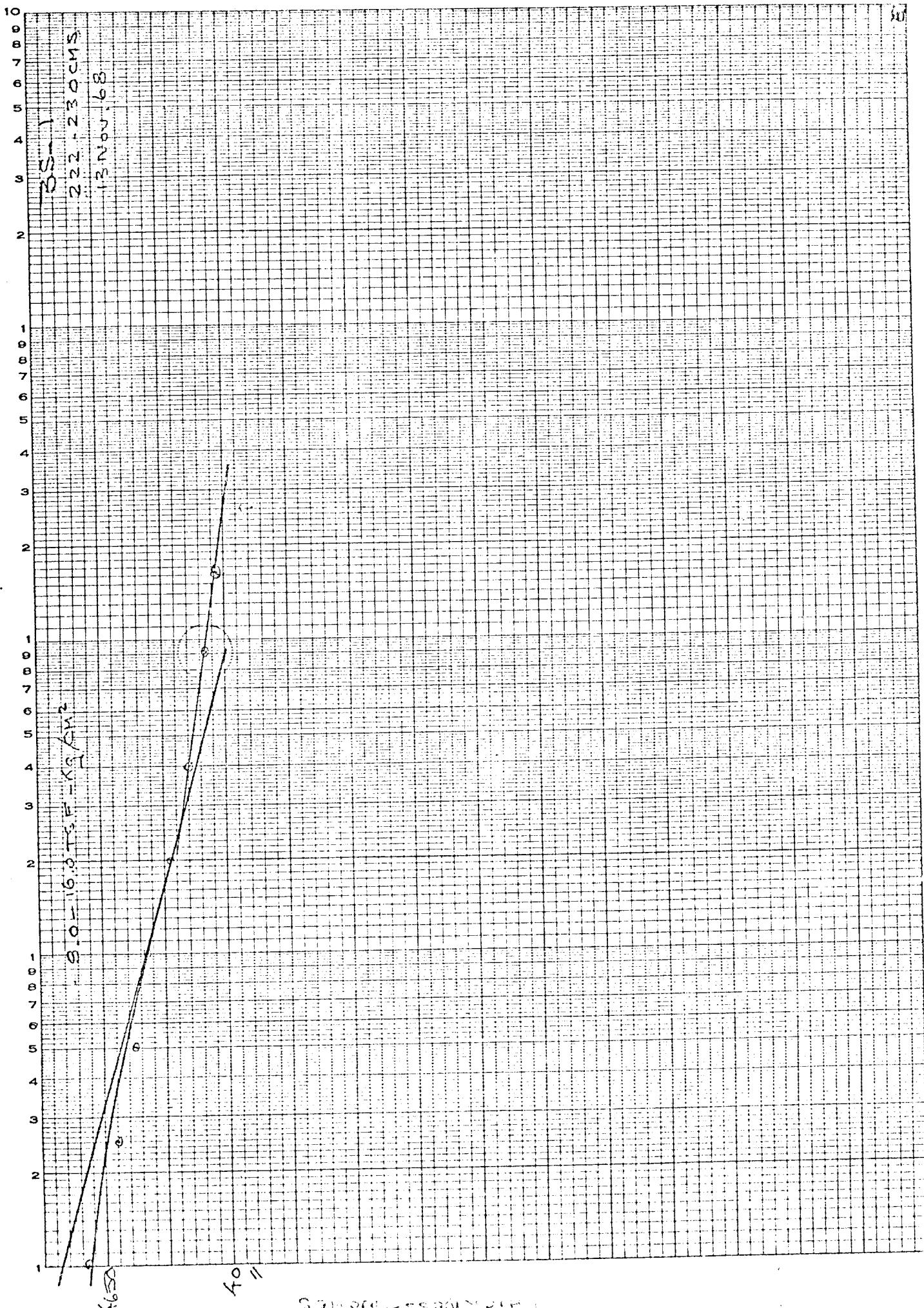
SEMANTIC INFORMATION



THE - MINUTES

NO. 340-L410 DICKIGEN GRAPH PAPER
MILLEMICRIC CYCLES - 10 LINES - 1 INCH

EUGENE DICKIGEN CO.
MA.



1C TO TH NCH 9-11
KEUFFEL & ESSER CO.
MADE IN U.S.A.

THICKNESS - INCHES

964

b3

62

61

60

50

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62

8

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1

THICKNESS (INCHES)

4800

.4798

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94

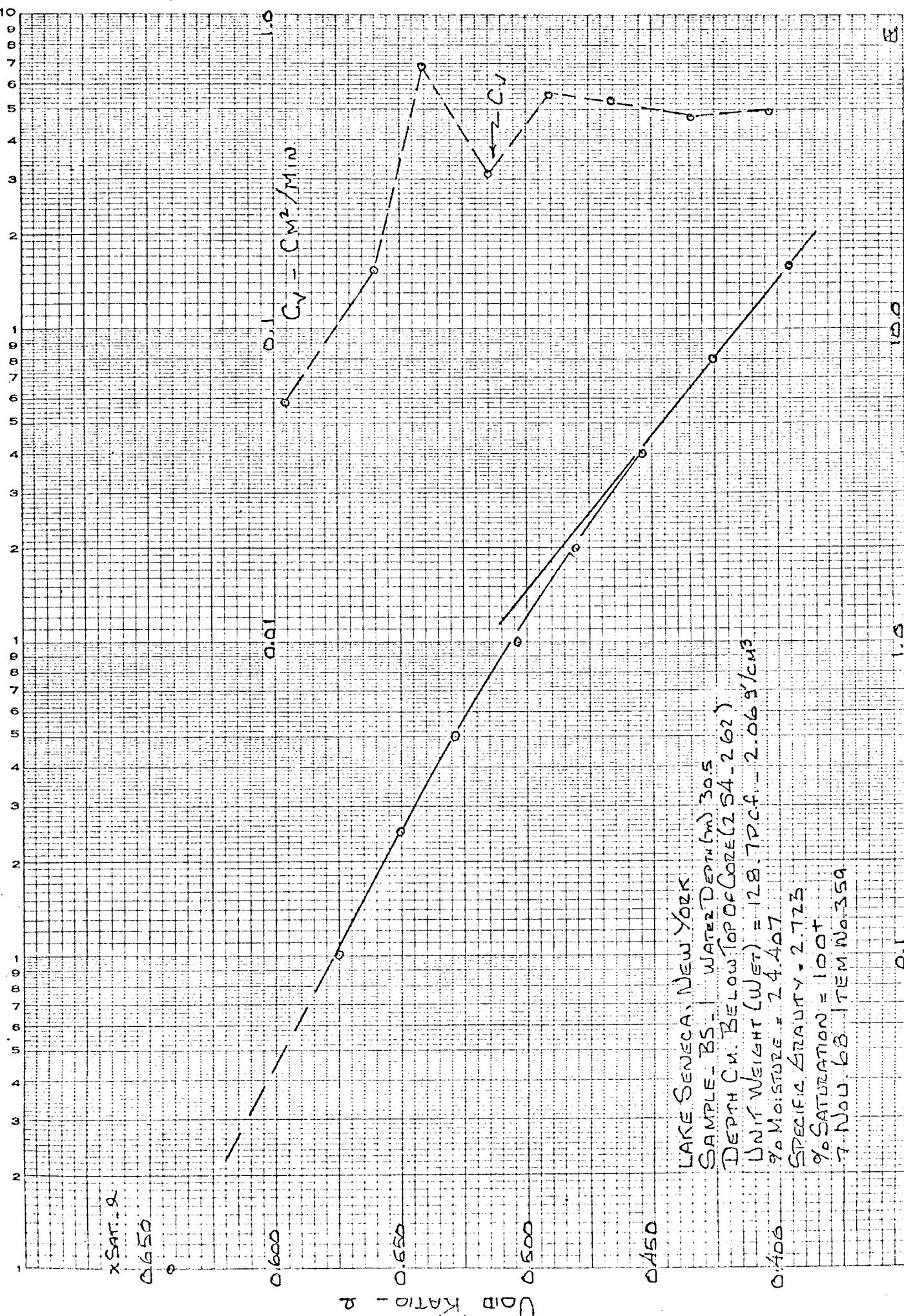
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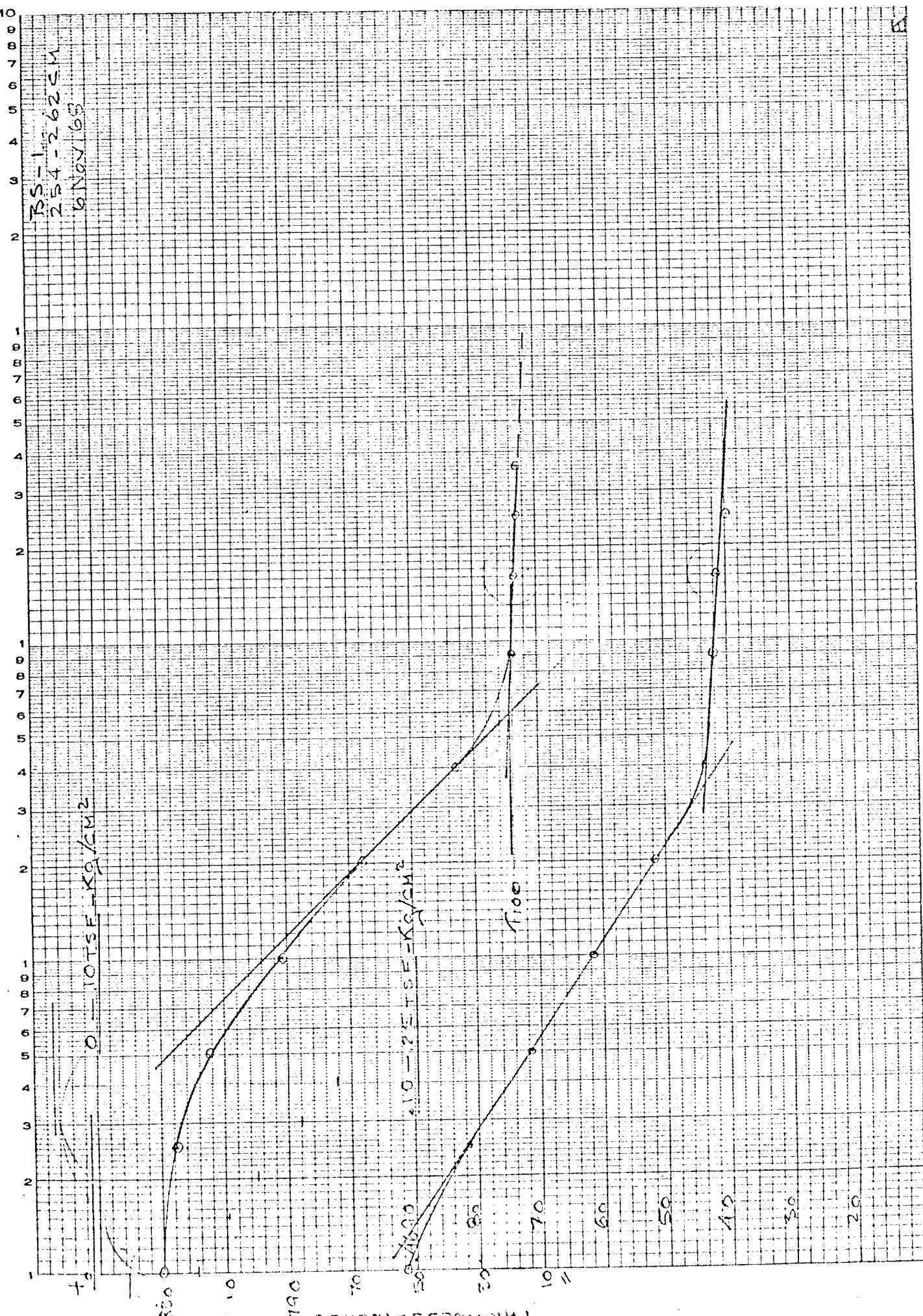
469

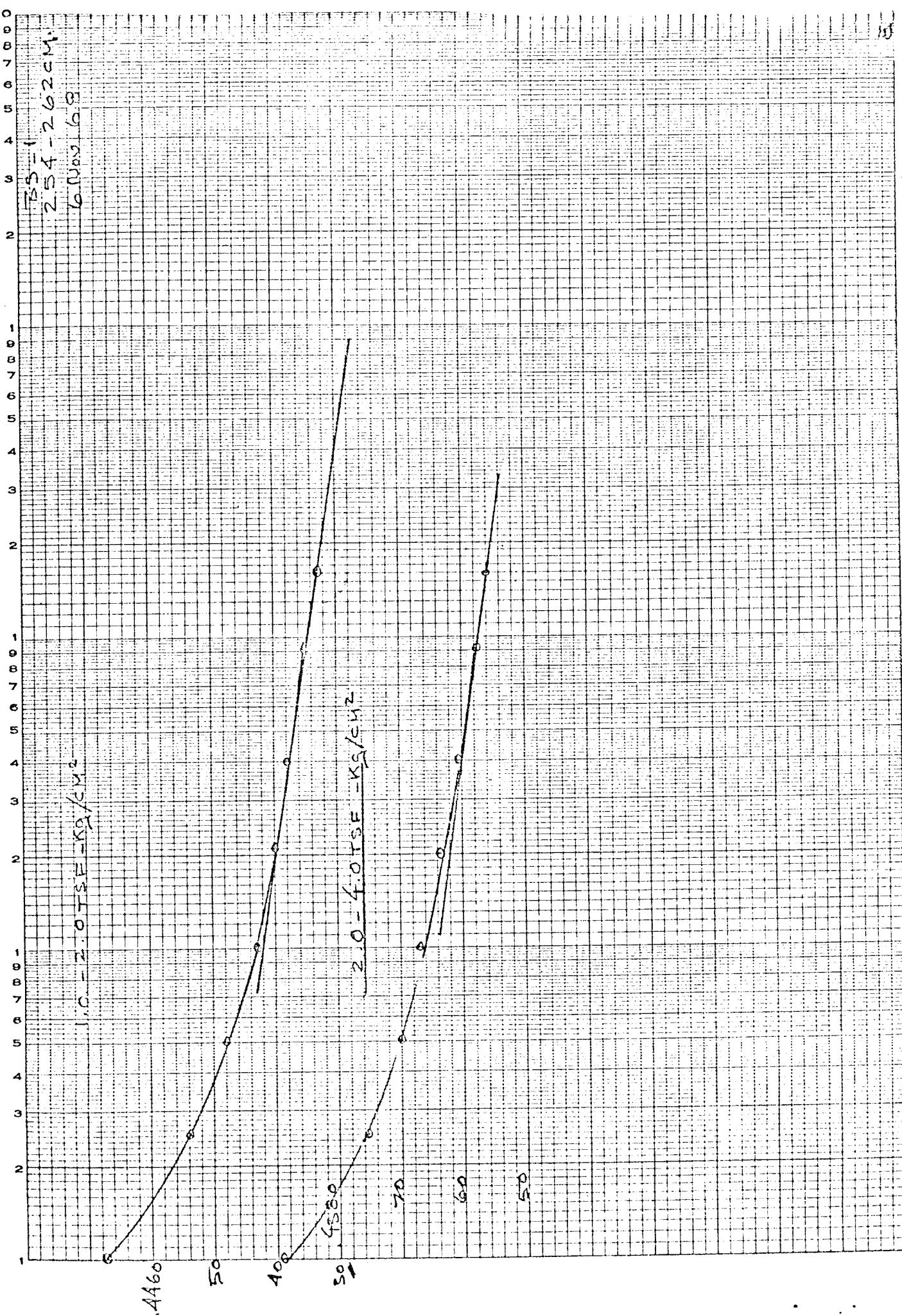


Lake Seneca, New York
 SAMPLE - BS - Water Depth (m) 30.5
 DEPTH C.M. BELOW Top Of Core (2.54 - 2.62)
 UNIT WEIGHT (WEI^{\prime}) = 128.7 D.C.F. - 2.06 g/cm³
 % Moisture = 24.427
 0.406

SPECIFIC GRAVITY = 2.723
% SATURATION = 100%
7 NOV. 68 ITEM NO. 35A

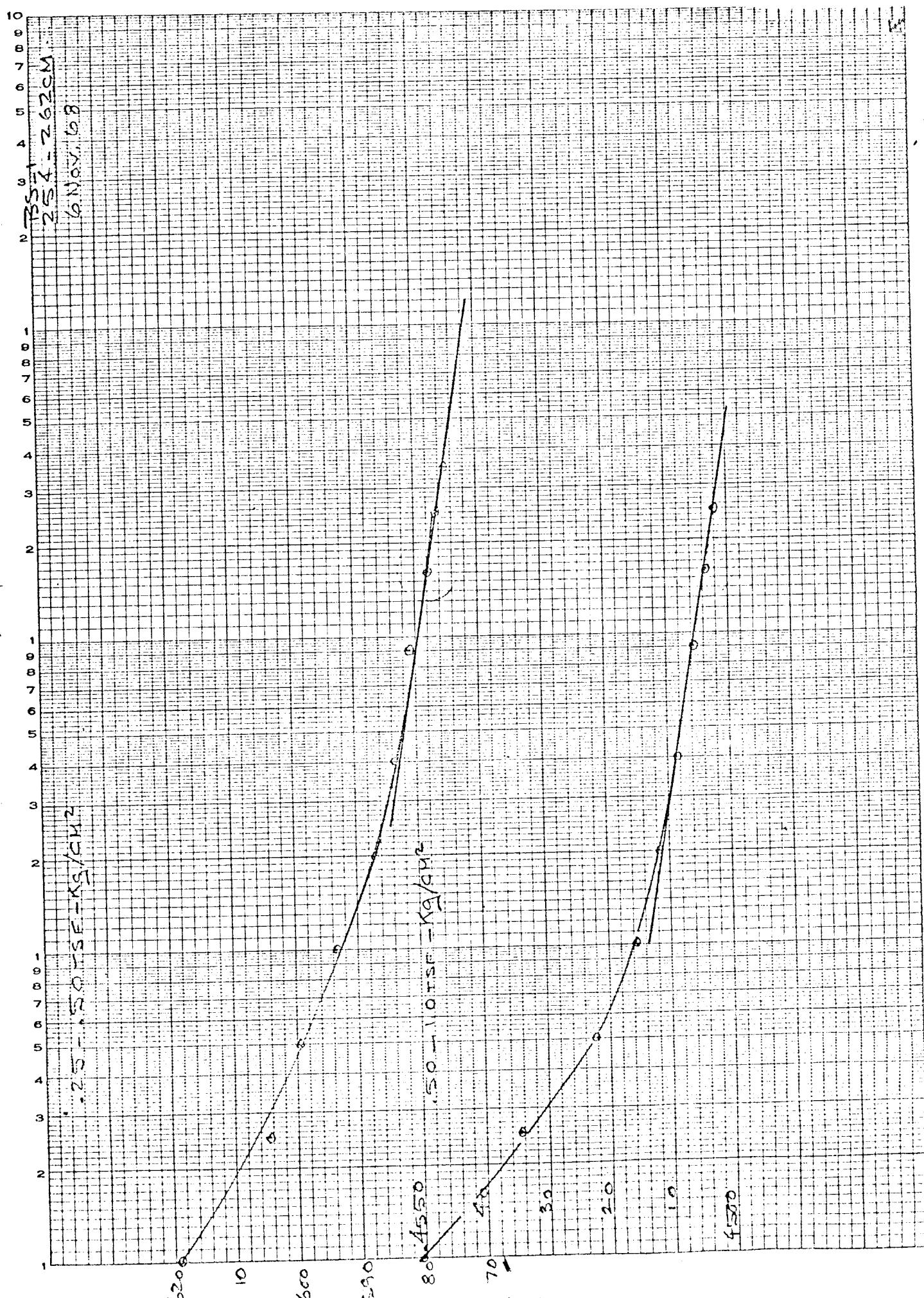
TIME - MINUTES

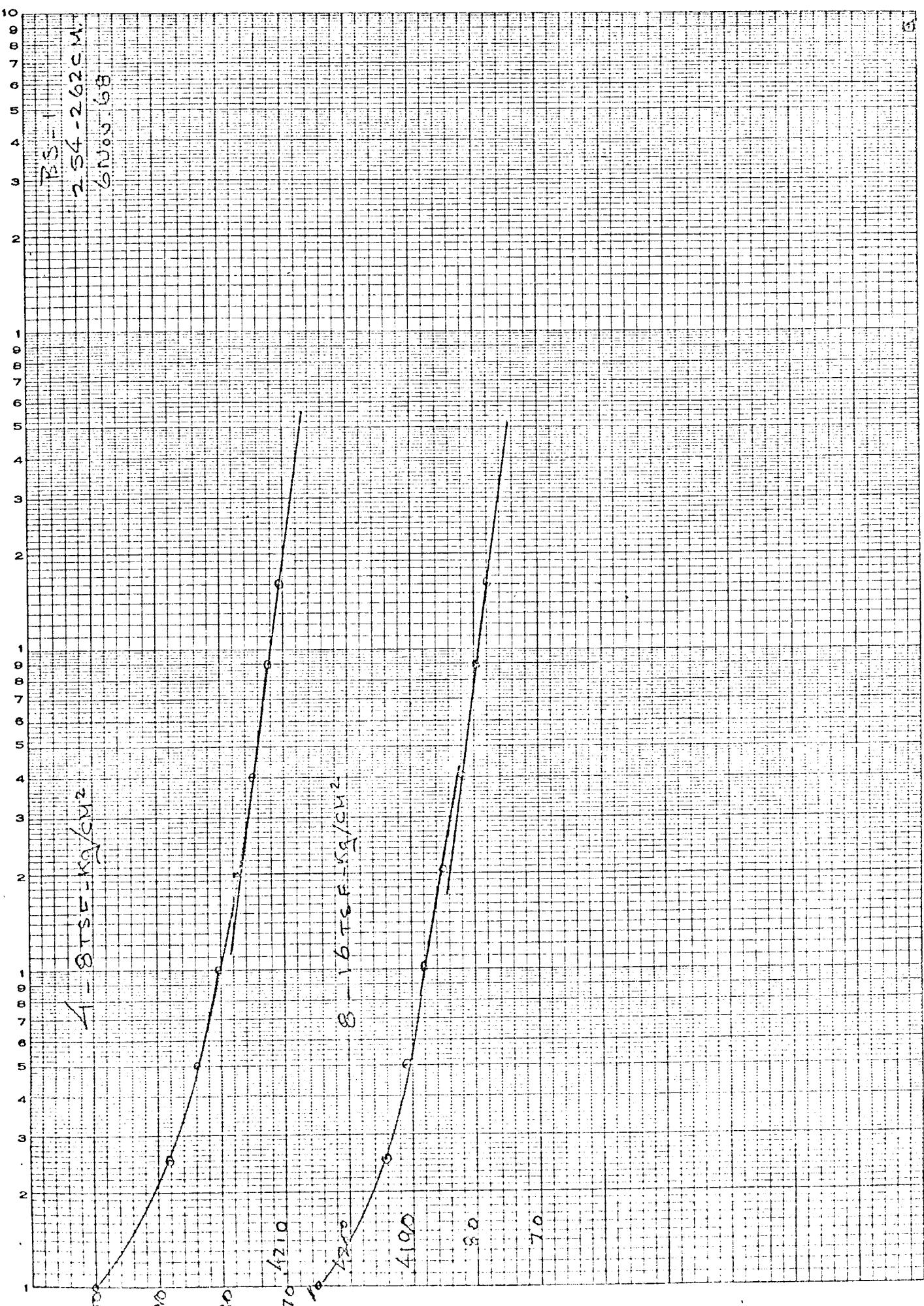




HARDNESS - LUCCHESI

TIME - MINUTES





TIME-MONOTONES

.4830

20

.4790

173

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0 46 22 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

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0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

0 36 20 15 24 32 30 31 30 31

THICKNESS - INCHES

1470

60

50

40

30

20

10

0

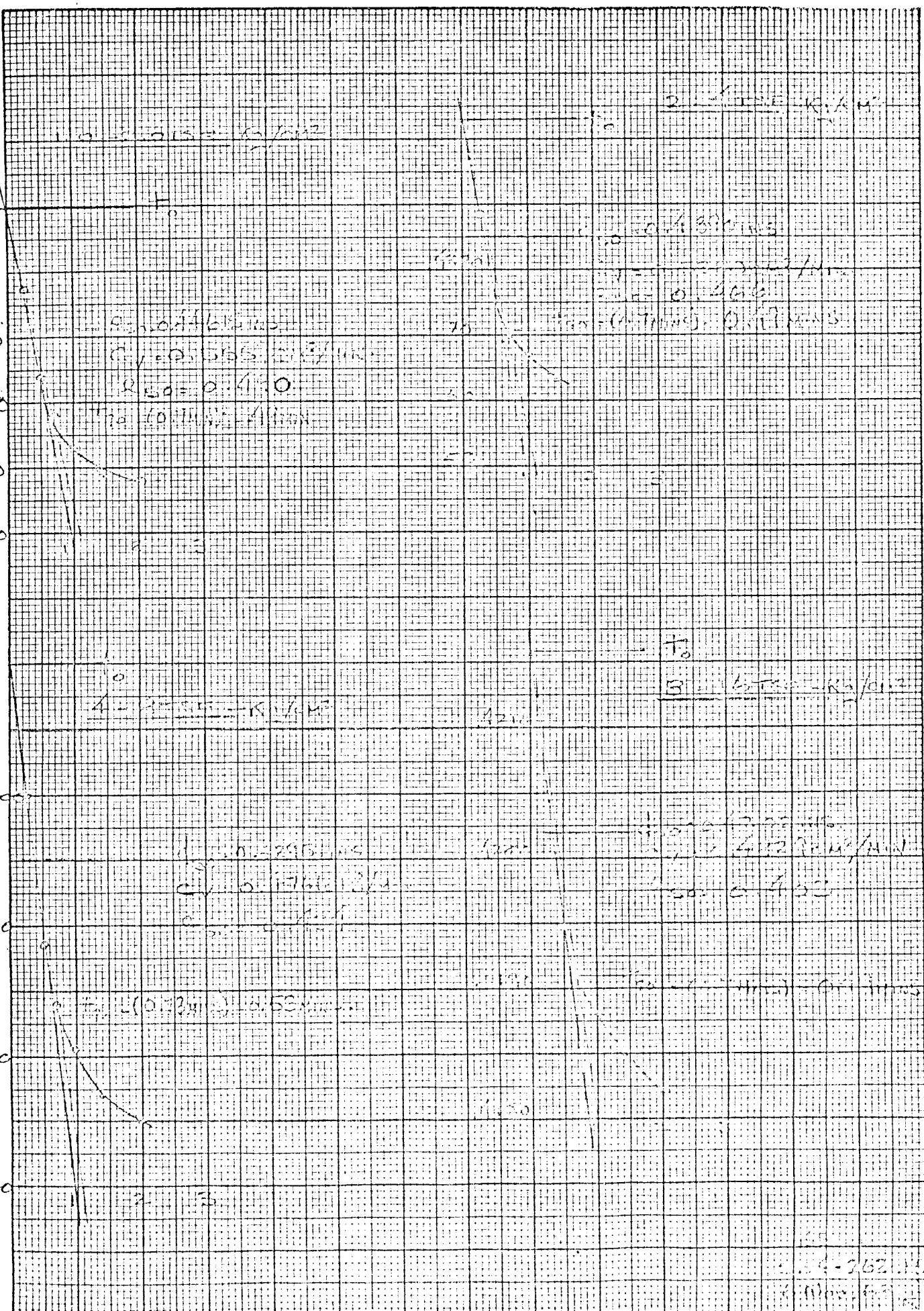
400

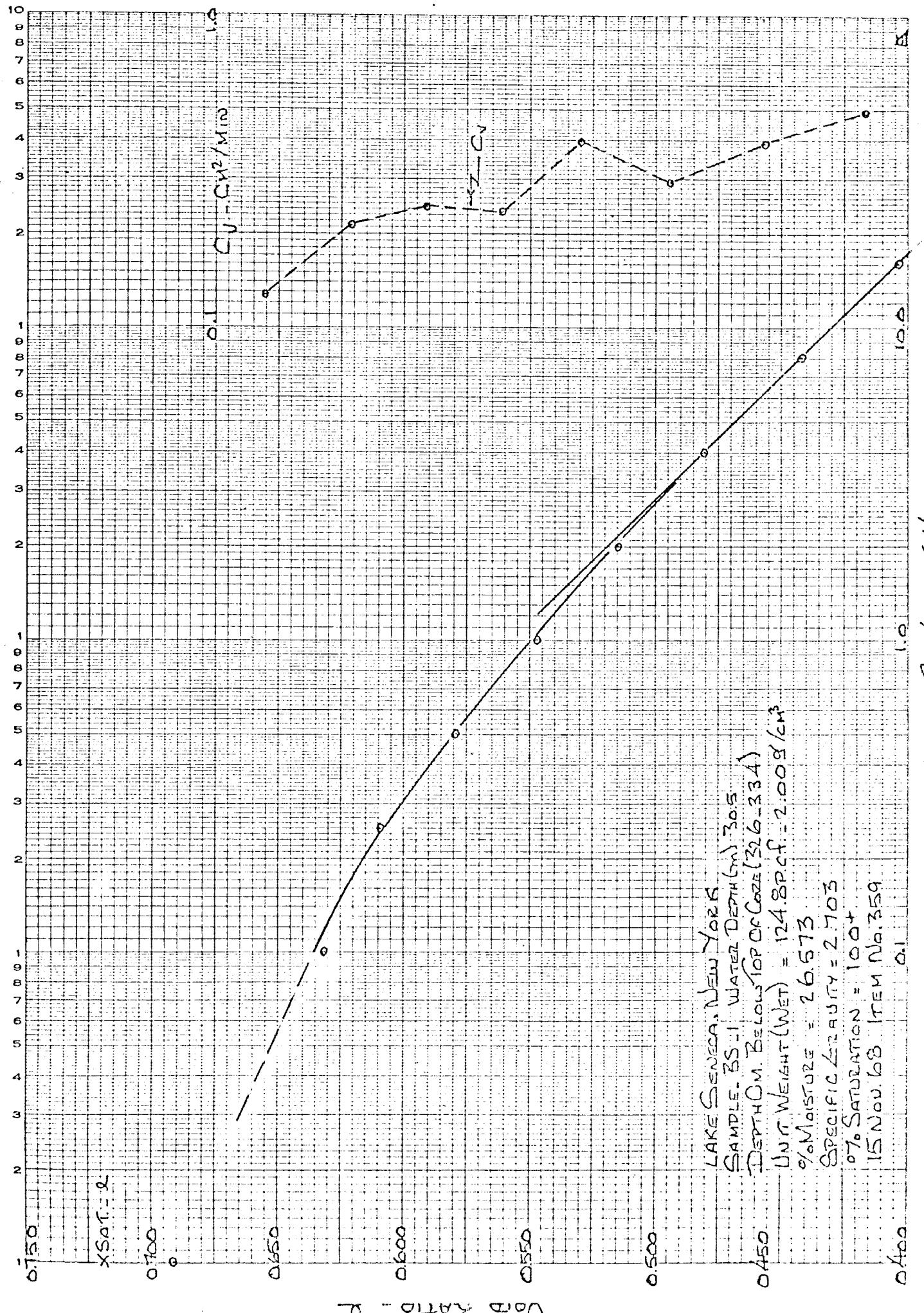
4290

80

70

✓ TIME - MINUTES

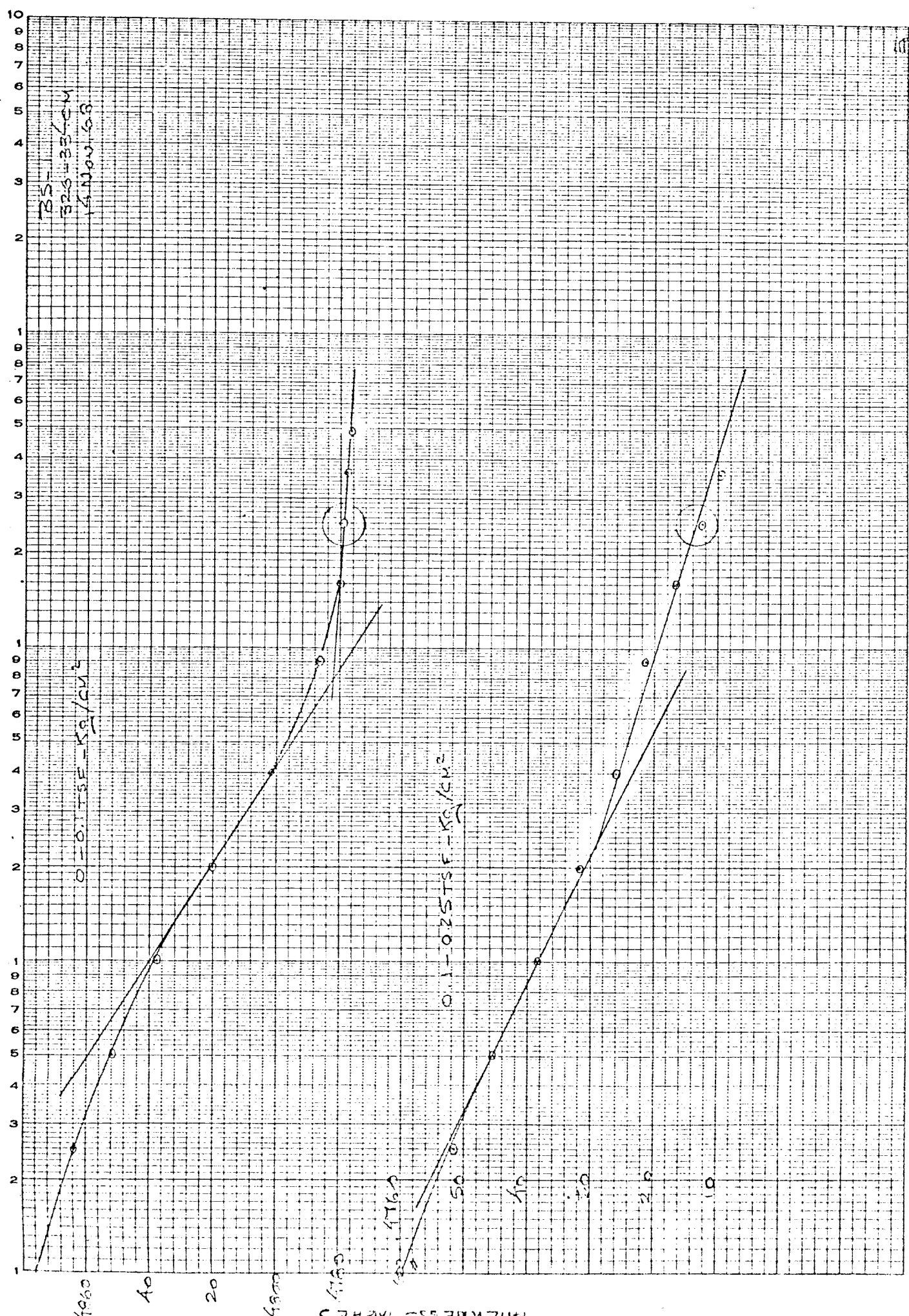




LAKE Seneca, New York
 SAMPLE - BS-1 WATER DEPTH (m) 30.5
 DEPTH (cm) BELOW TOP OF CORE (326-334)
 UNIT WEIGHT (WET) = 124.8pcf = 2008/cm³
 % MOISTURE = 26.573
 SPECIFIC GRAVITY = 2.703
 % SATURATION = 100 +
 15 NOV. 68 ITEM No. 359
 0.400

100 LINE DISCHARGE CHARGE PAPER
CYCLIC 100 NS F. ICH

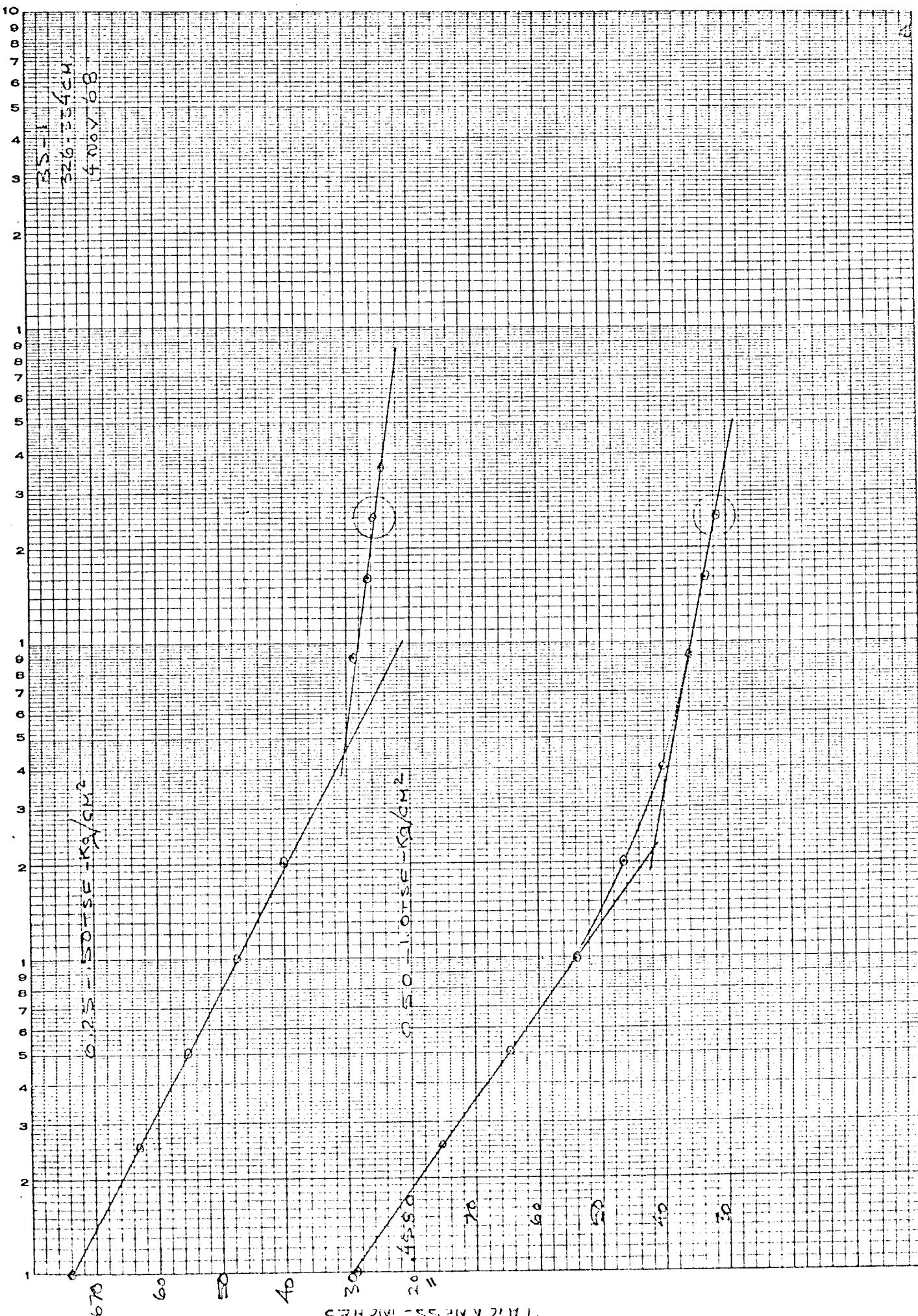
ETHENE -
GEN.
MAC.

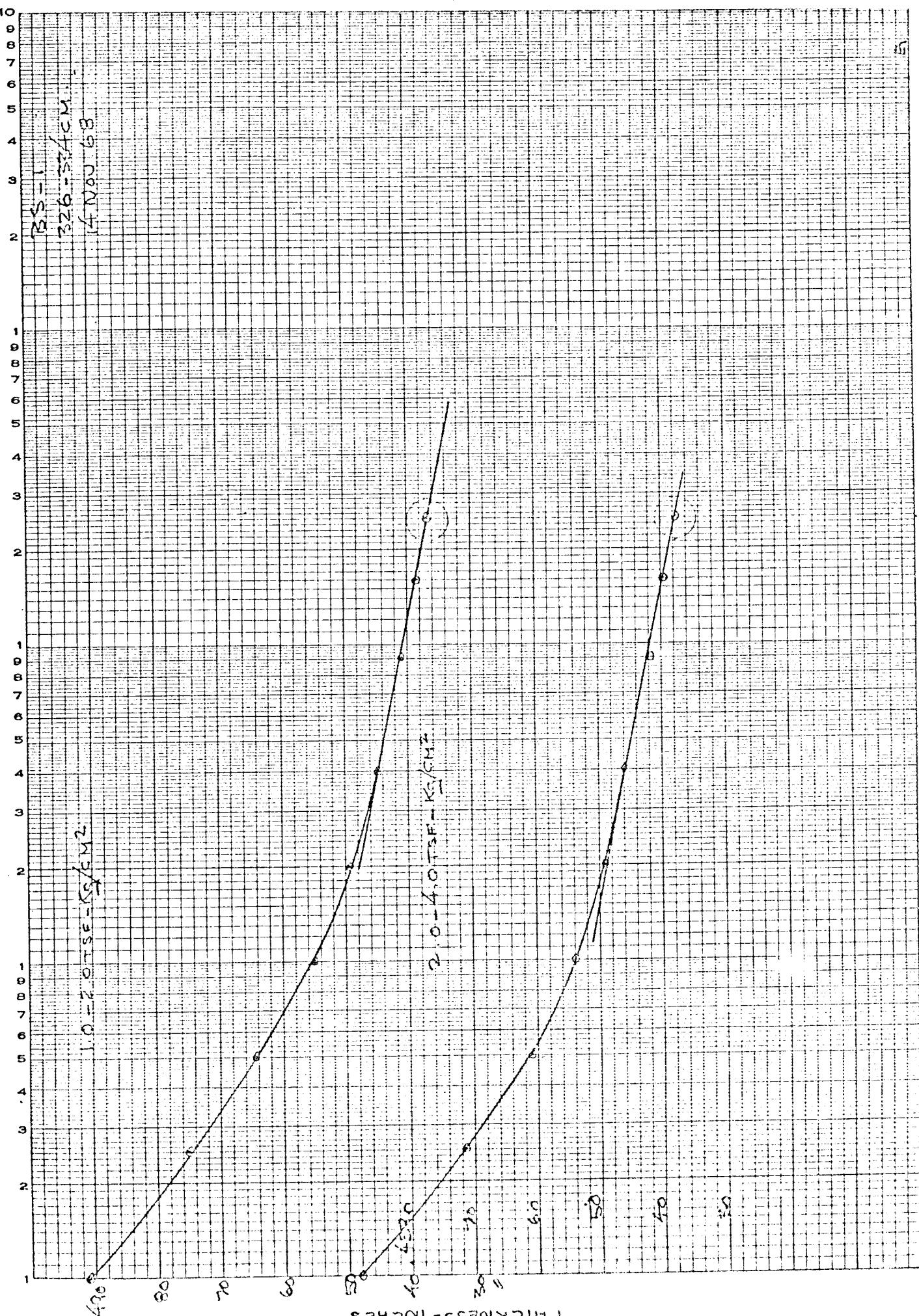


TIME - MINUTES

7

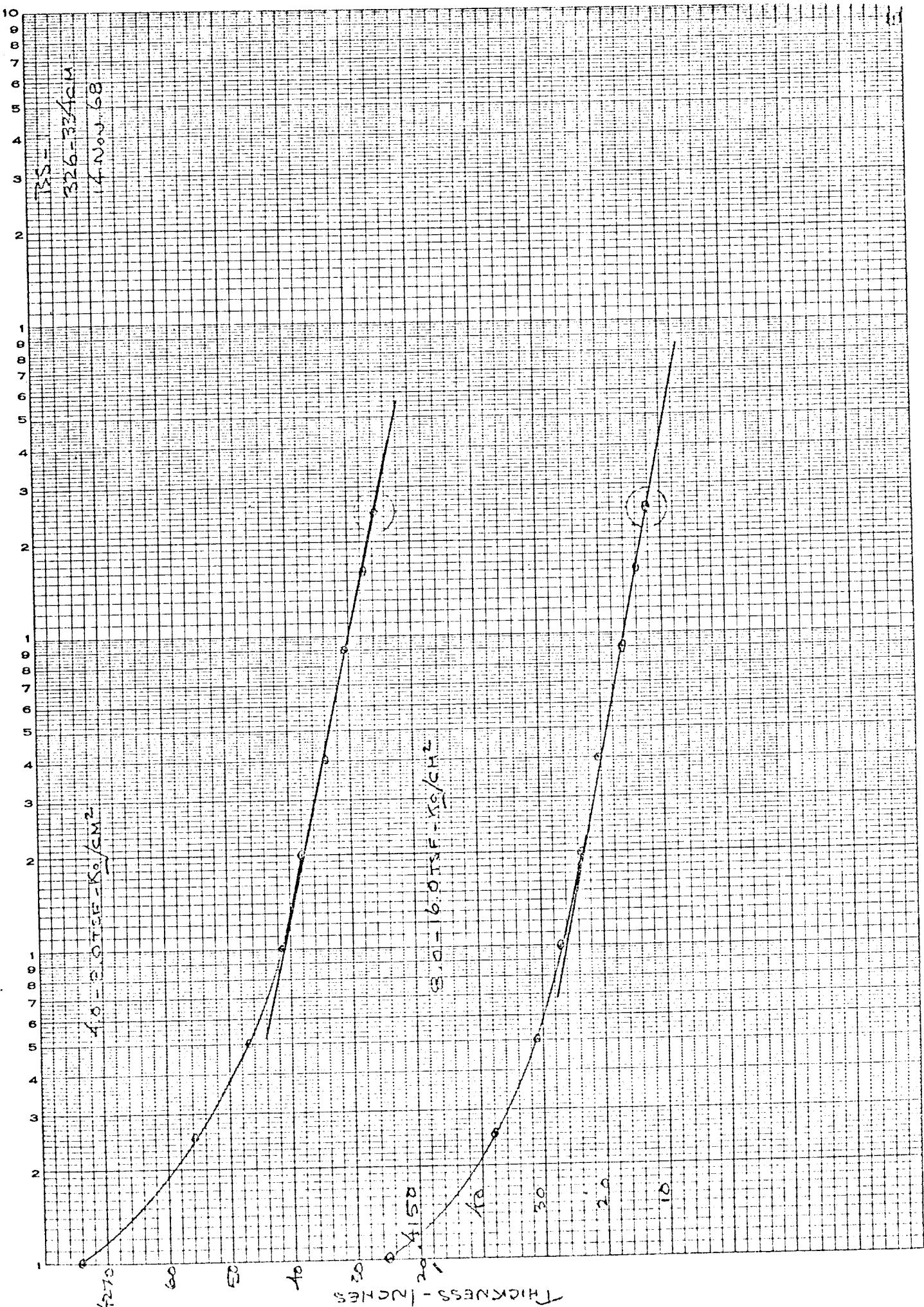
TIME - Minutes





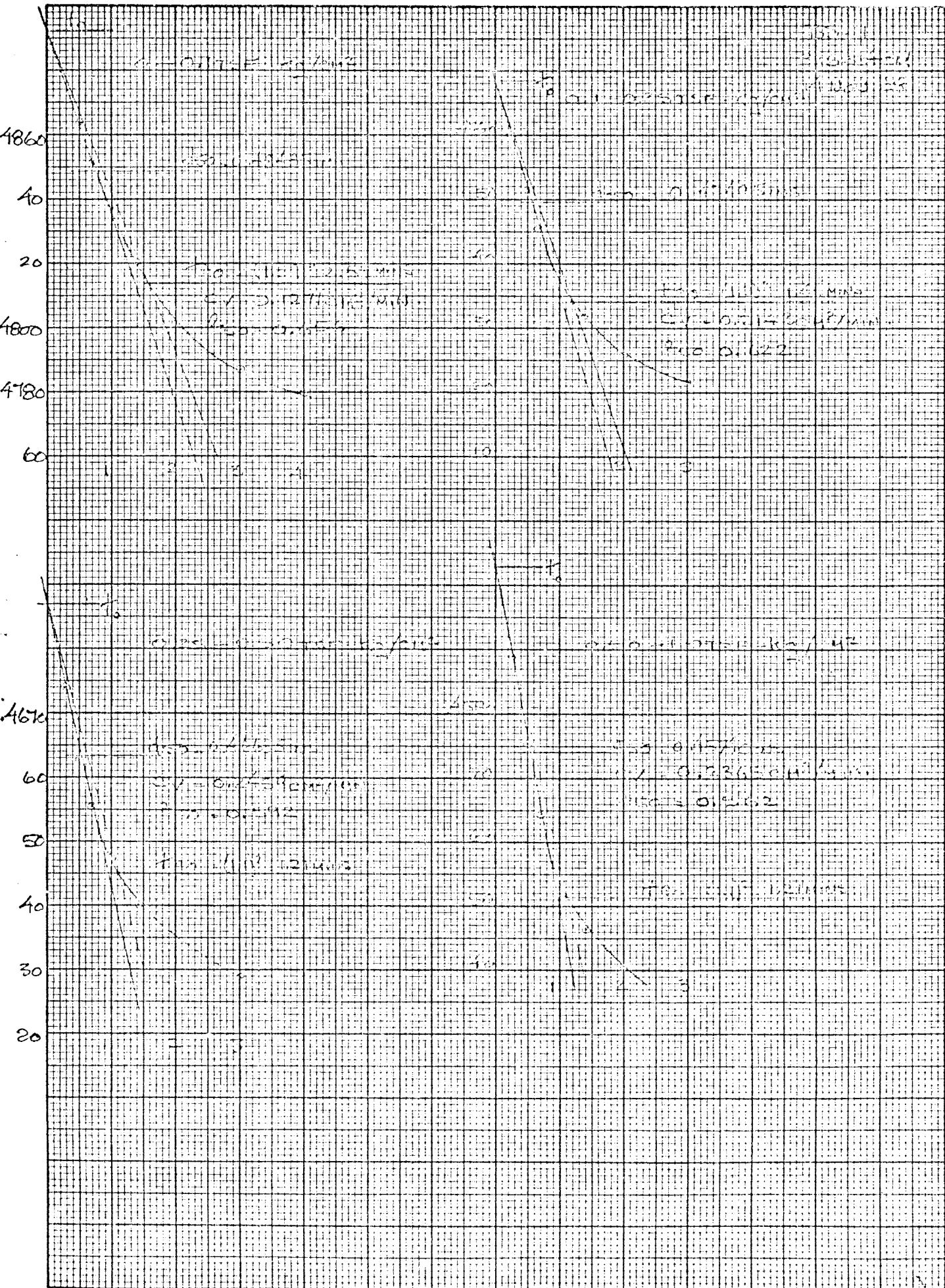
TIME-MINUTES

TIME-MINUTES



EXCELSIOR TO THE 1/4 INCH
REED
10 X 10 THE 1/4 INCH
REED
559-11

THICKNESS - INCHES



TIME - MINUTES

359
TOT. % IN.
EL & CO.

THICKNESS - INCHES

4490

80

70

60

50

40

30

20

10

0

4270

60

50

40

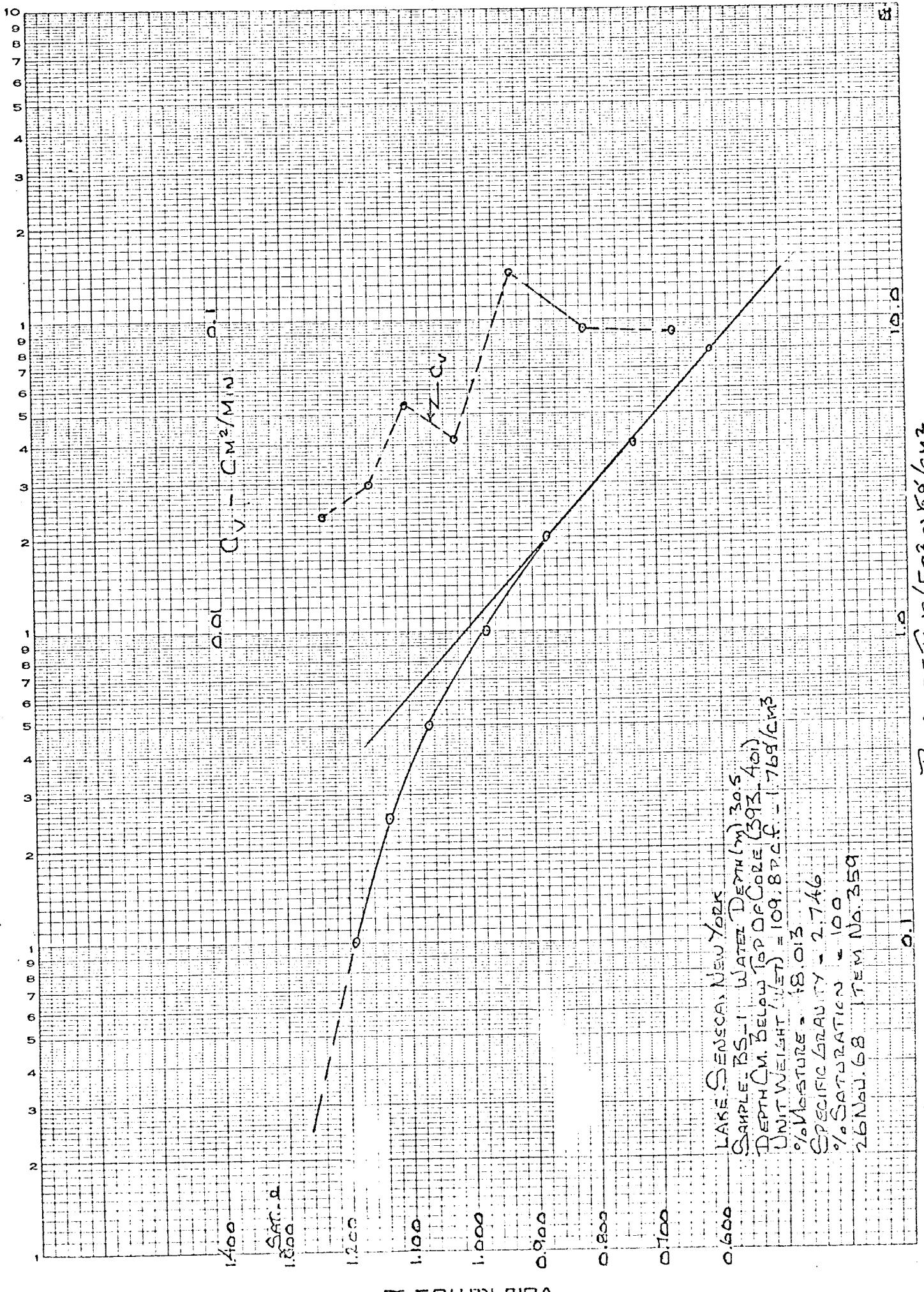
30

20

10

0

NO. 340-L10 DILUTED GRAPH PAPER
4 CYCLES X 10 DIVISIONS PER INCH



LAKE SENeca, NEW YORK

SAMPLE BS-11 WATER DEPTH (m) 30.5
DEPTH (M. BELOW TOP OF CORE (393-401)

UNIT WEIGHT (G/SET) = 109.87 G.F. = 1.769/cm³

% MOISTURE = 48.03

SPECIFIC GRAVITY = 2.746

% SATURATION = 100

26 JUL 68 ITEM NO. 359

0.1

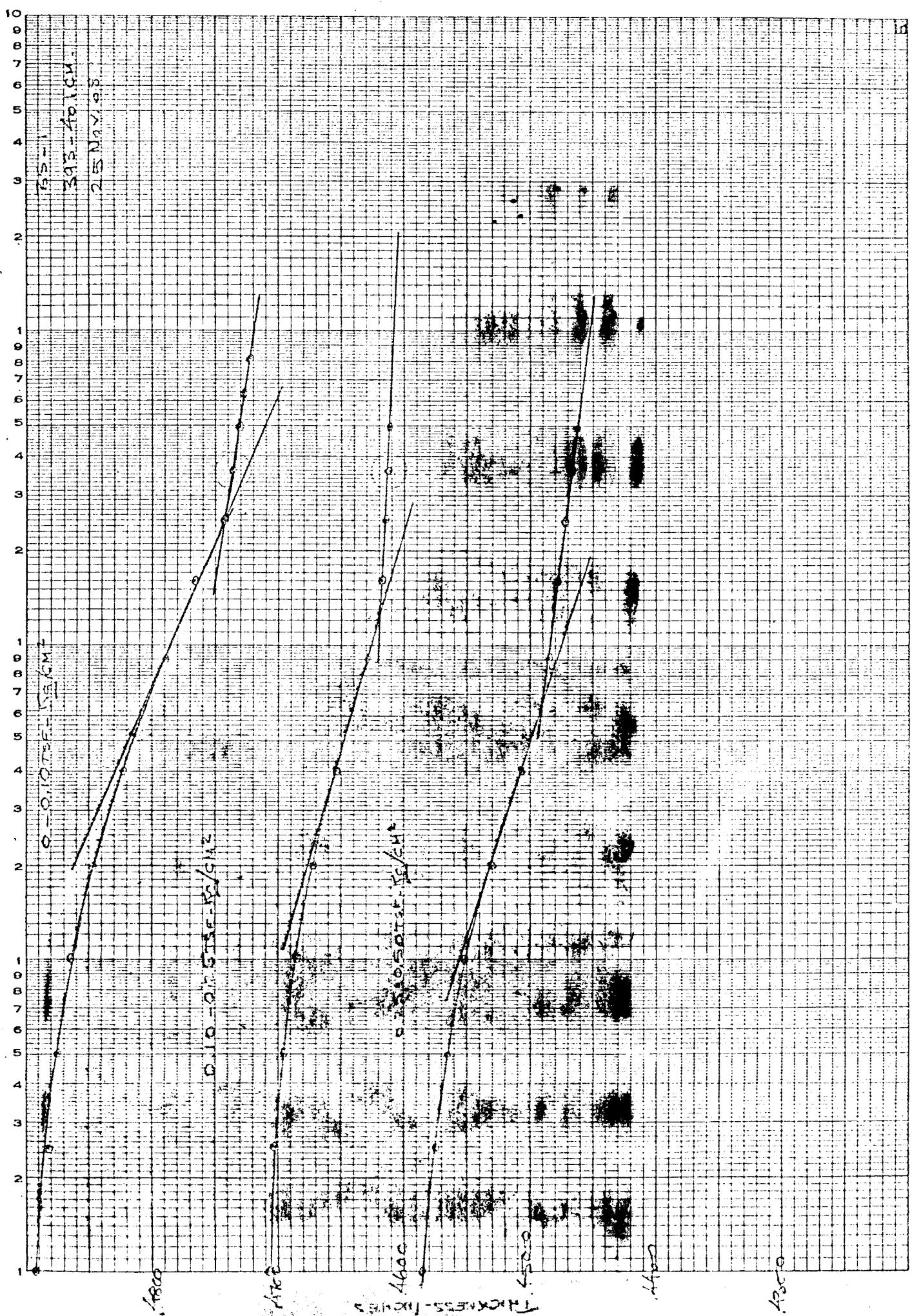
PRESSURE / $F + z$ K δ/cm^2

1.0

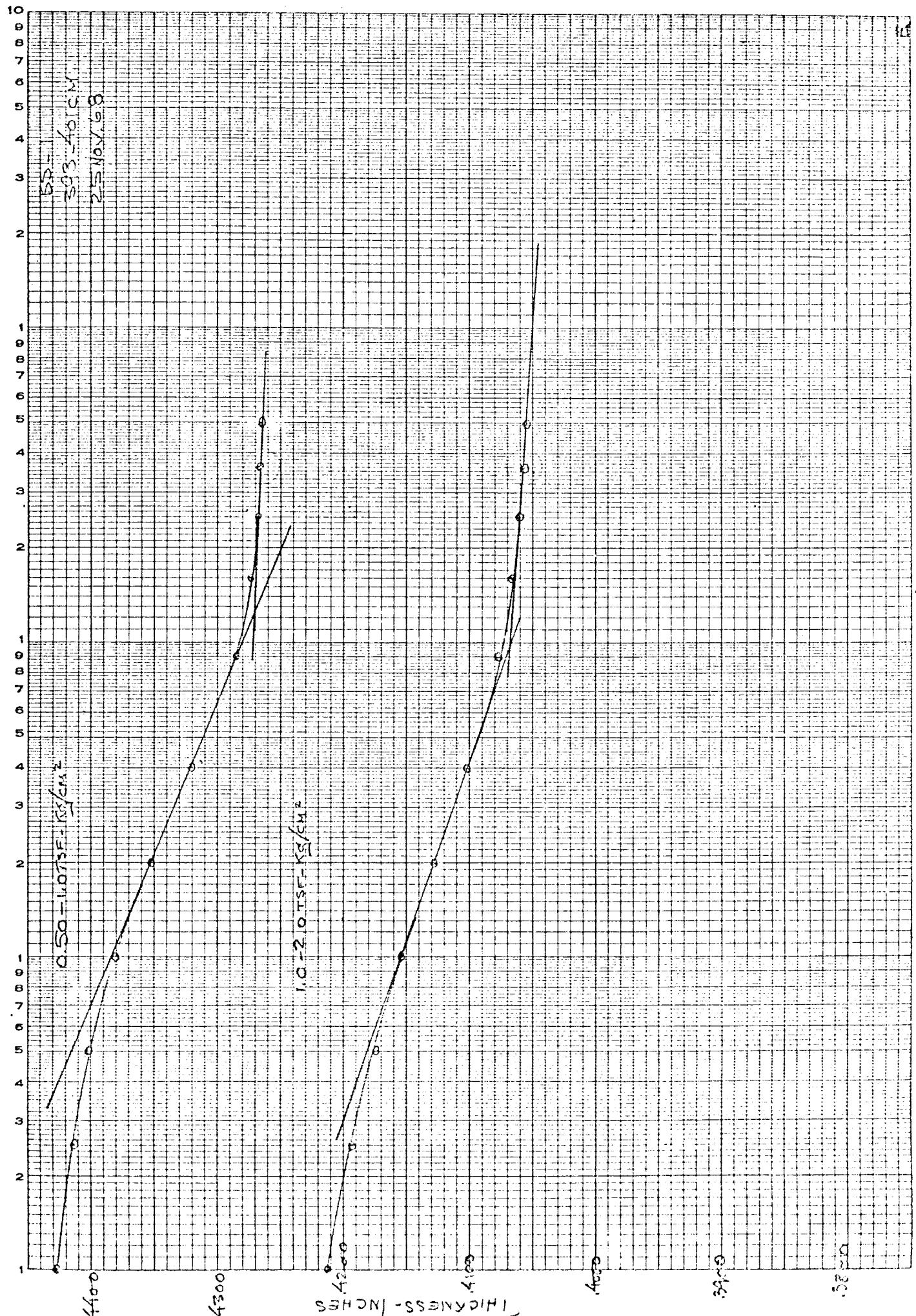
0.1

0.0 0.1 $C_V - C_u$ / cm^2/min

THE MINUTES

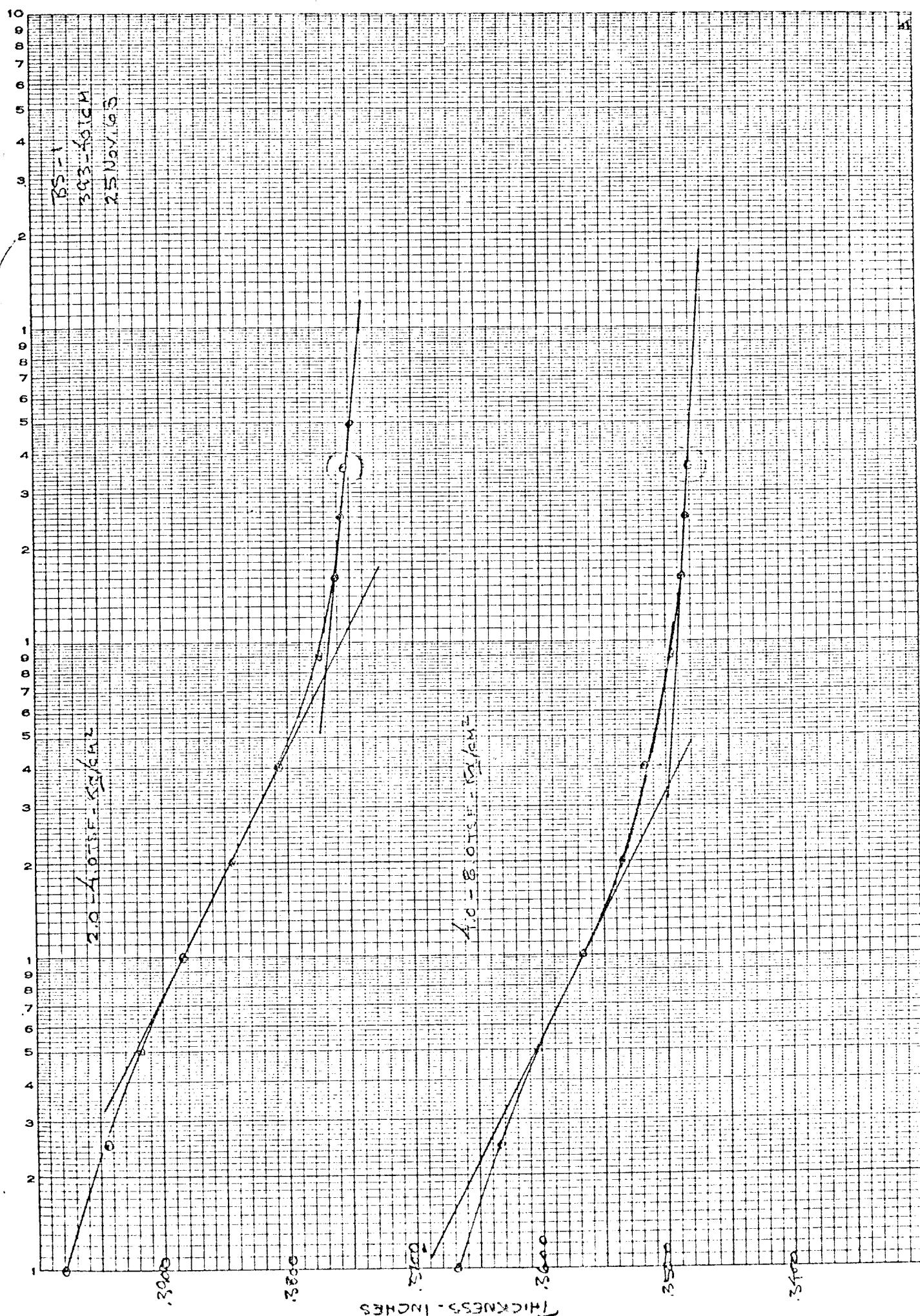


TIME - MINUTES



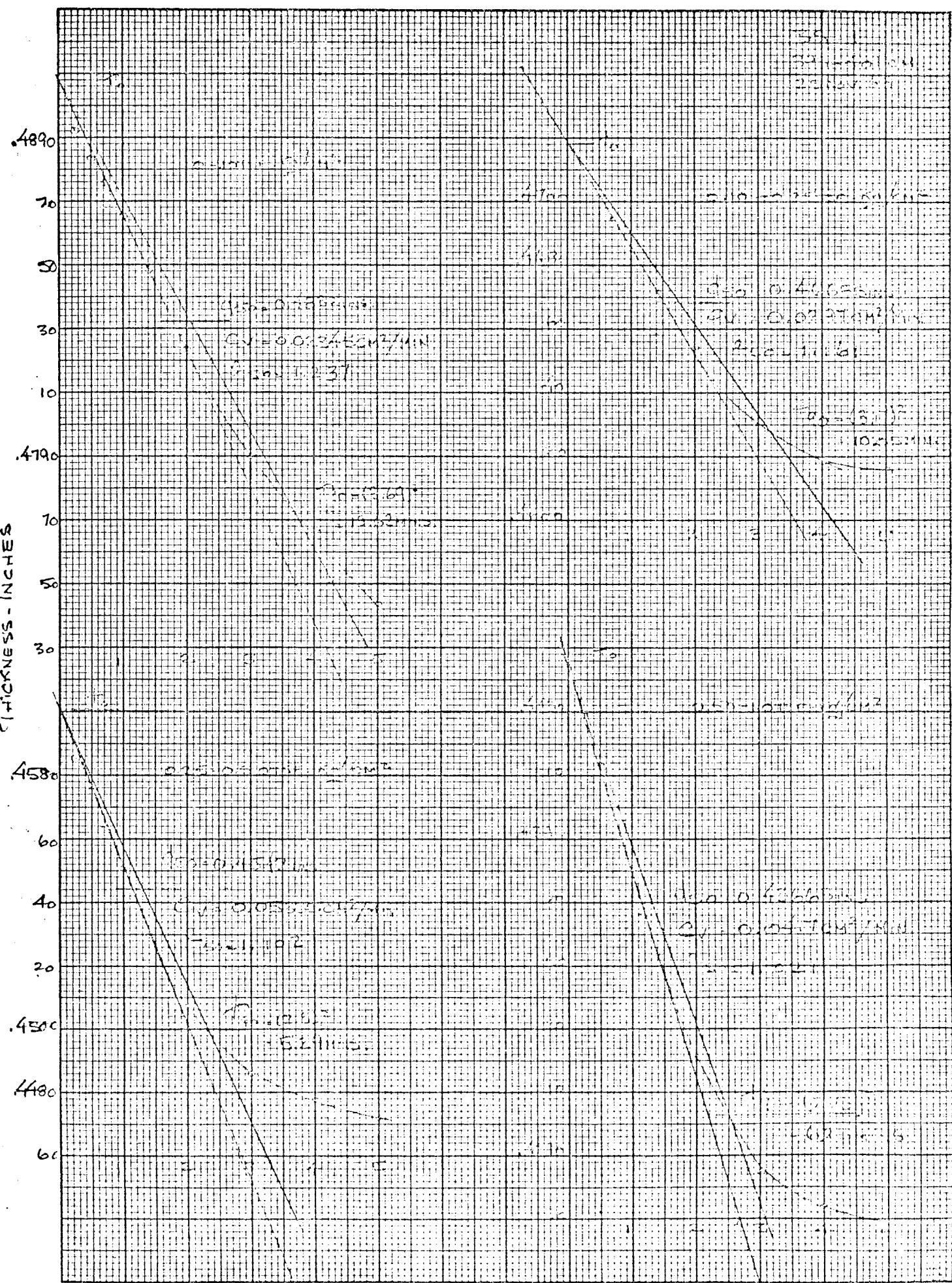
RENE RITTER

No. 340-LINED DIAZINE GRAPH PAPER
1000 CYCLES TO 10 ELENS - 1 INCH

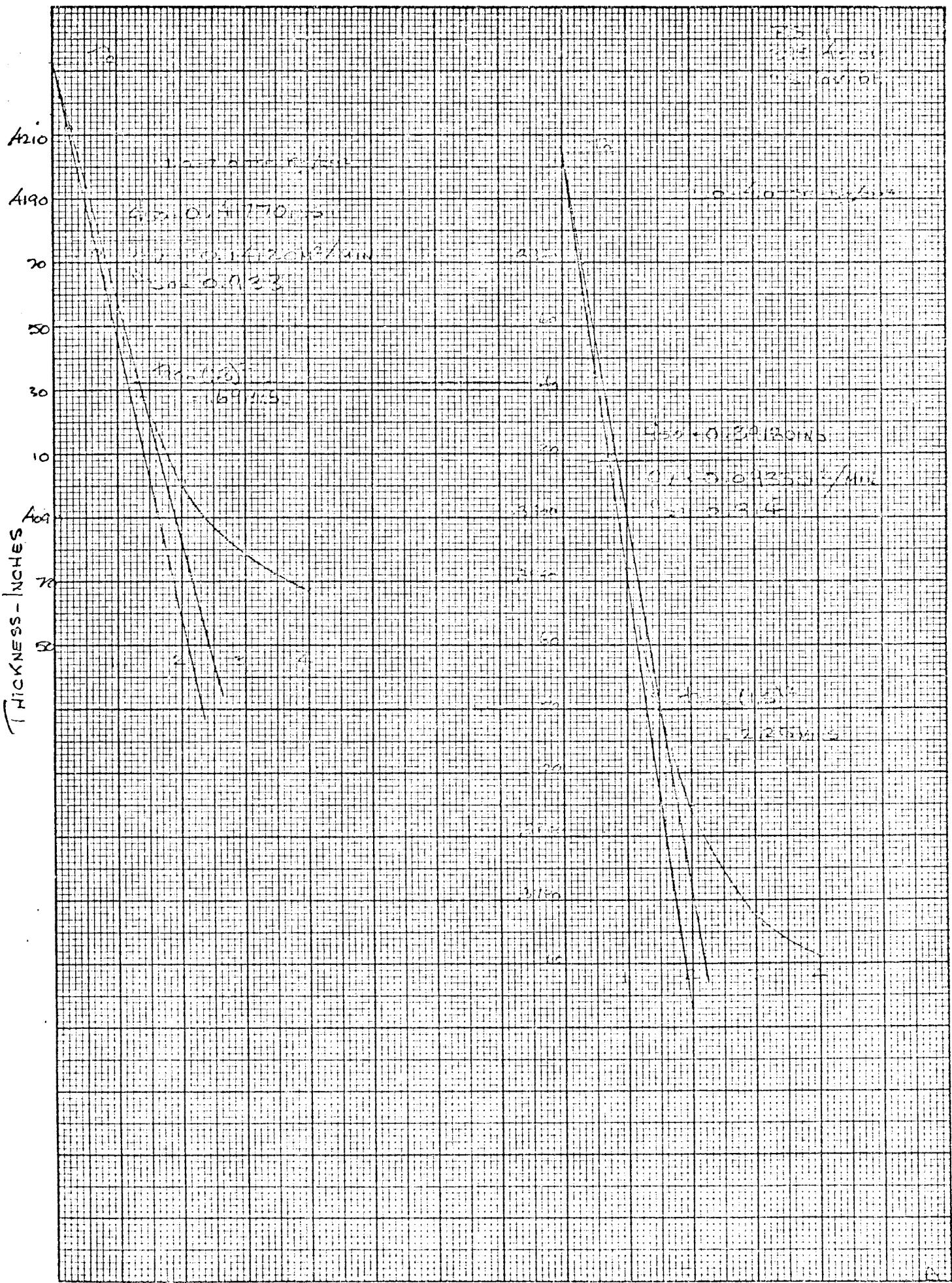


K.E. KUEFFEL & ESSER CO. MADE IN U.S.A.

EX-AUTO 1115 INCN 359



✓ TIME - MINUTES



THICKNESS - INCHES

PRINTED IN U.S.A.

PRINTING NO. 34

.3660

.40

.20

.5600

.3580

.60

.40

.20

.3500

.3480

360-3145

360-2945

360-2945

360-2945

360-2945

360-2945

360-2945

360-2945

360-2945

360-2945

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360-2945

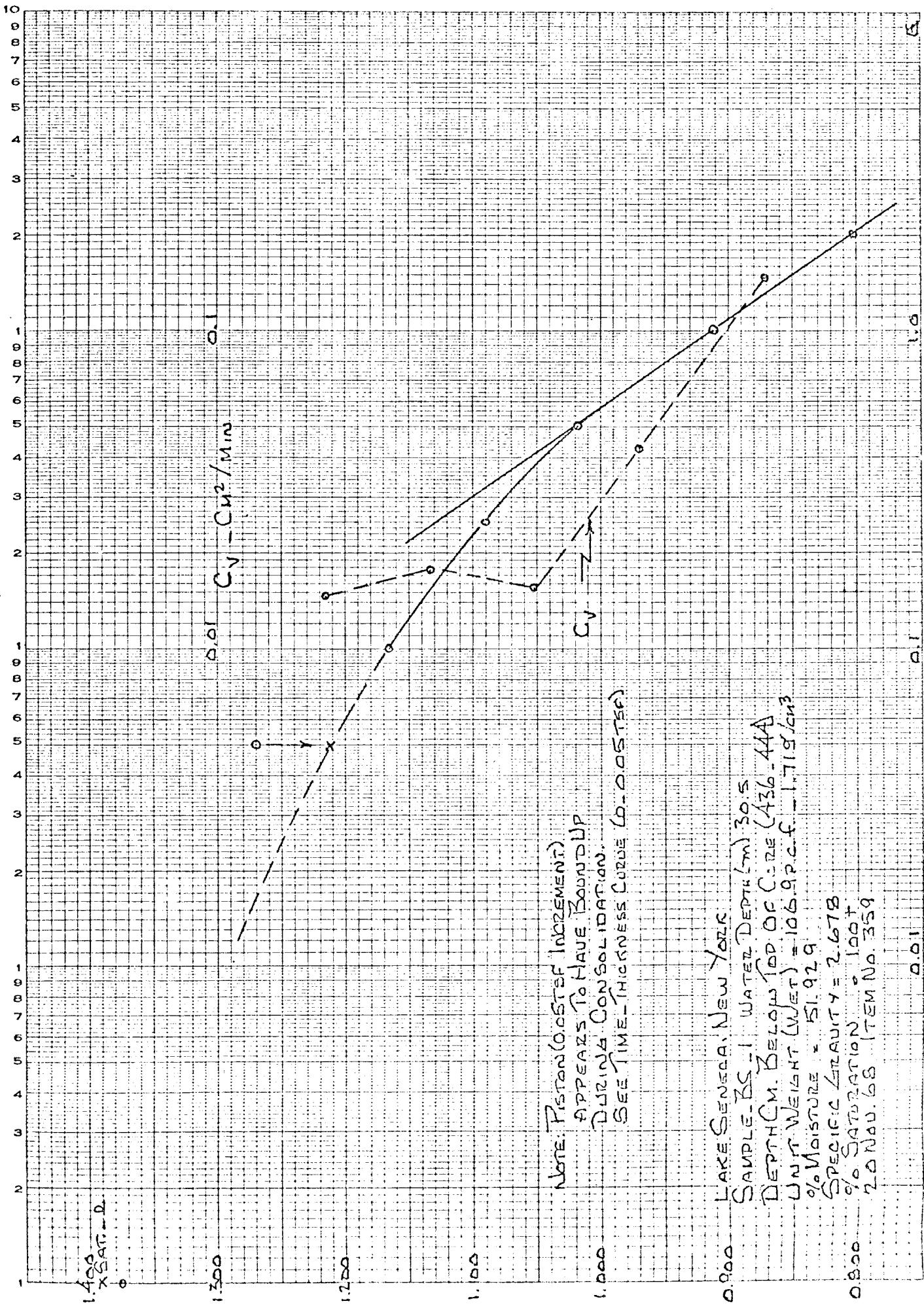
360-2945

✓ TIME - MINUTES

TESTS ON SOILS AND ROCKS
CONTRIBUTED BY THE MEMBER COMPANIES

COLLECTIVE TESTS
NCH

CYCLES 0 - 245

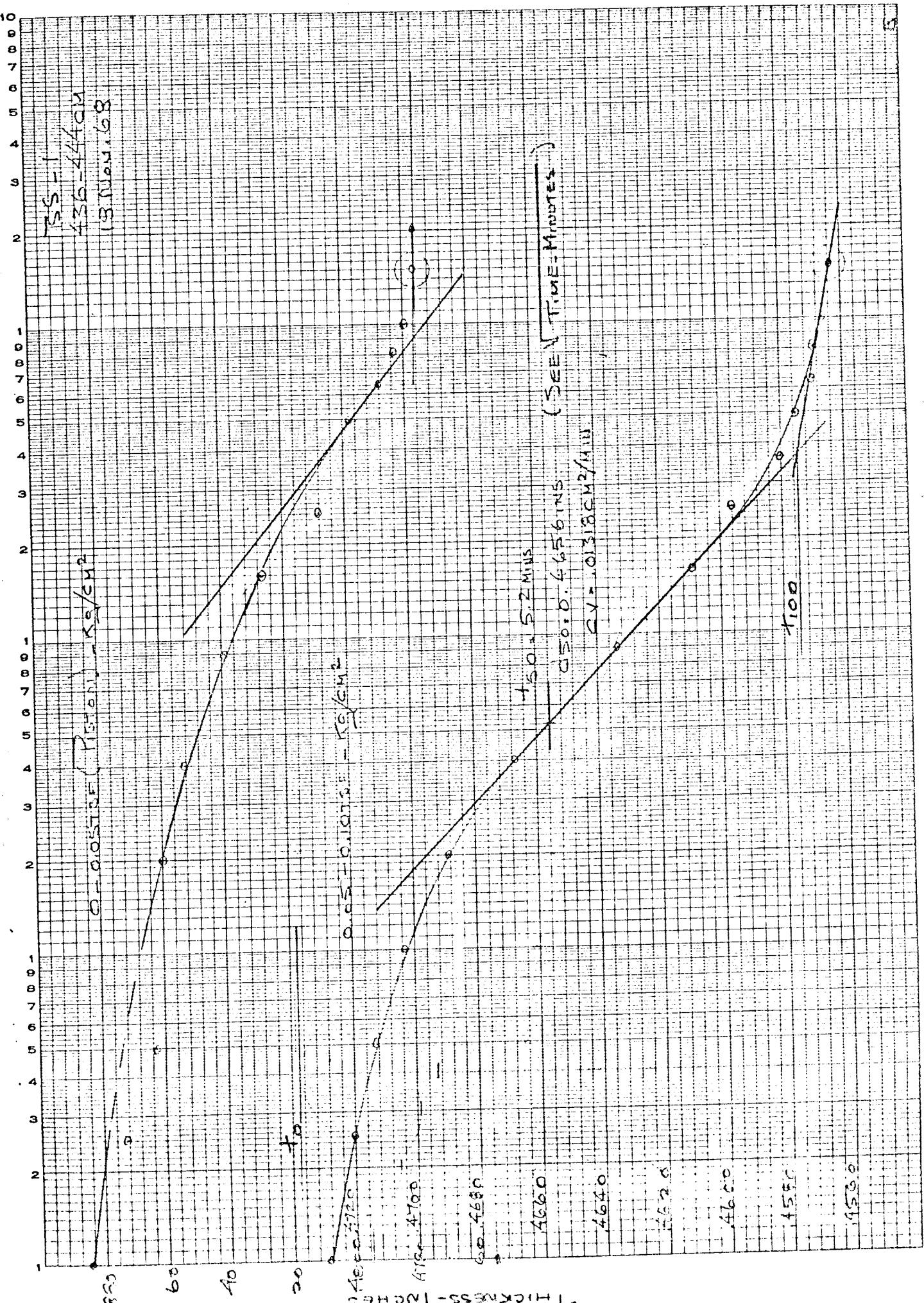


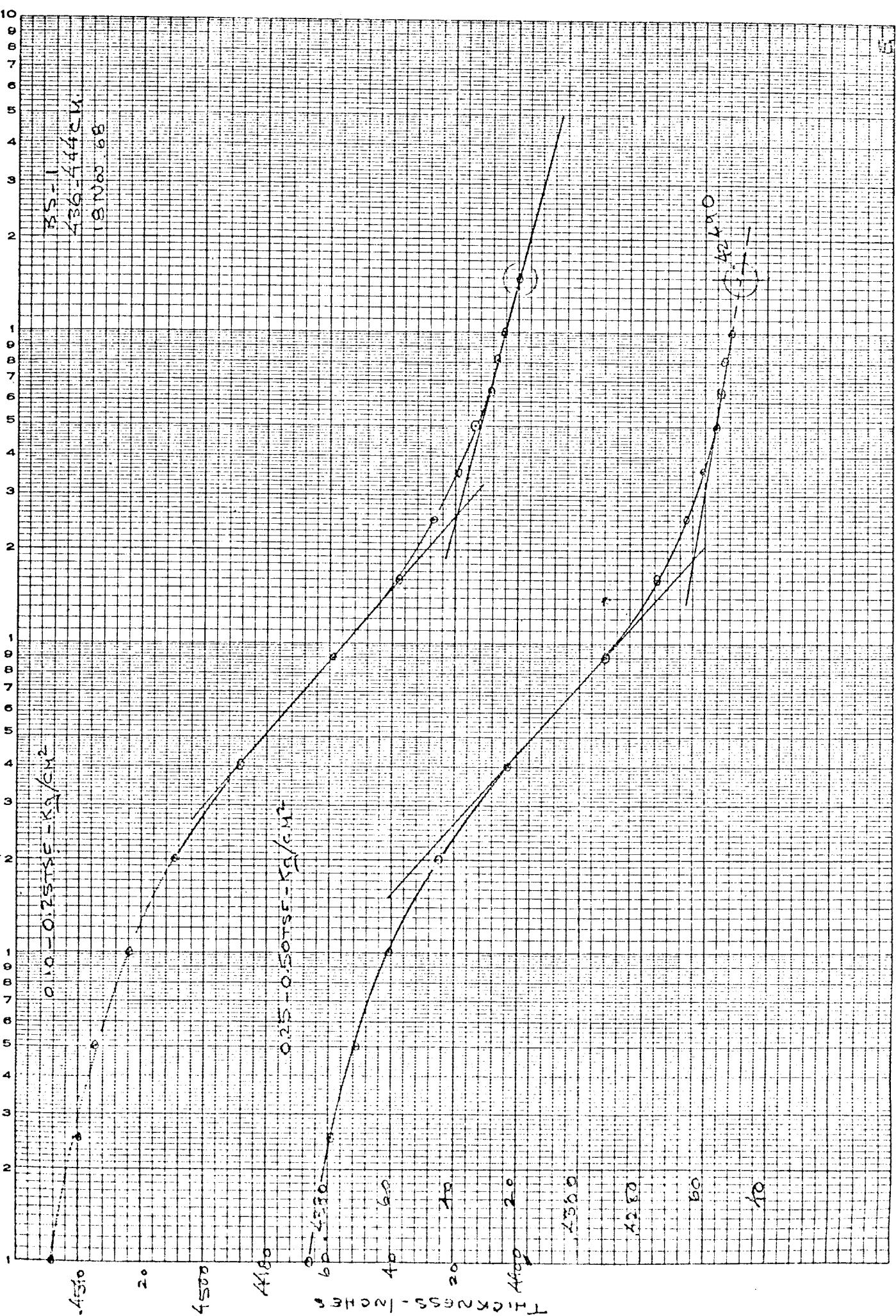
Note: PISTON COAST INCREMENT
APPEARS TO HAVE BOUND UP
DURING CONSOLIDATION.
SEE TIME-THICKNESS CURVE (0-005 TEST)

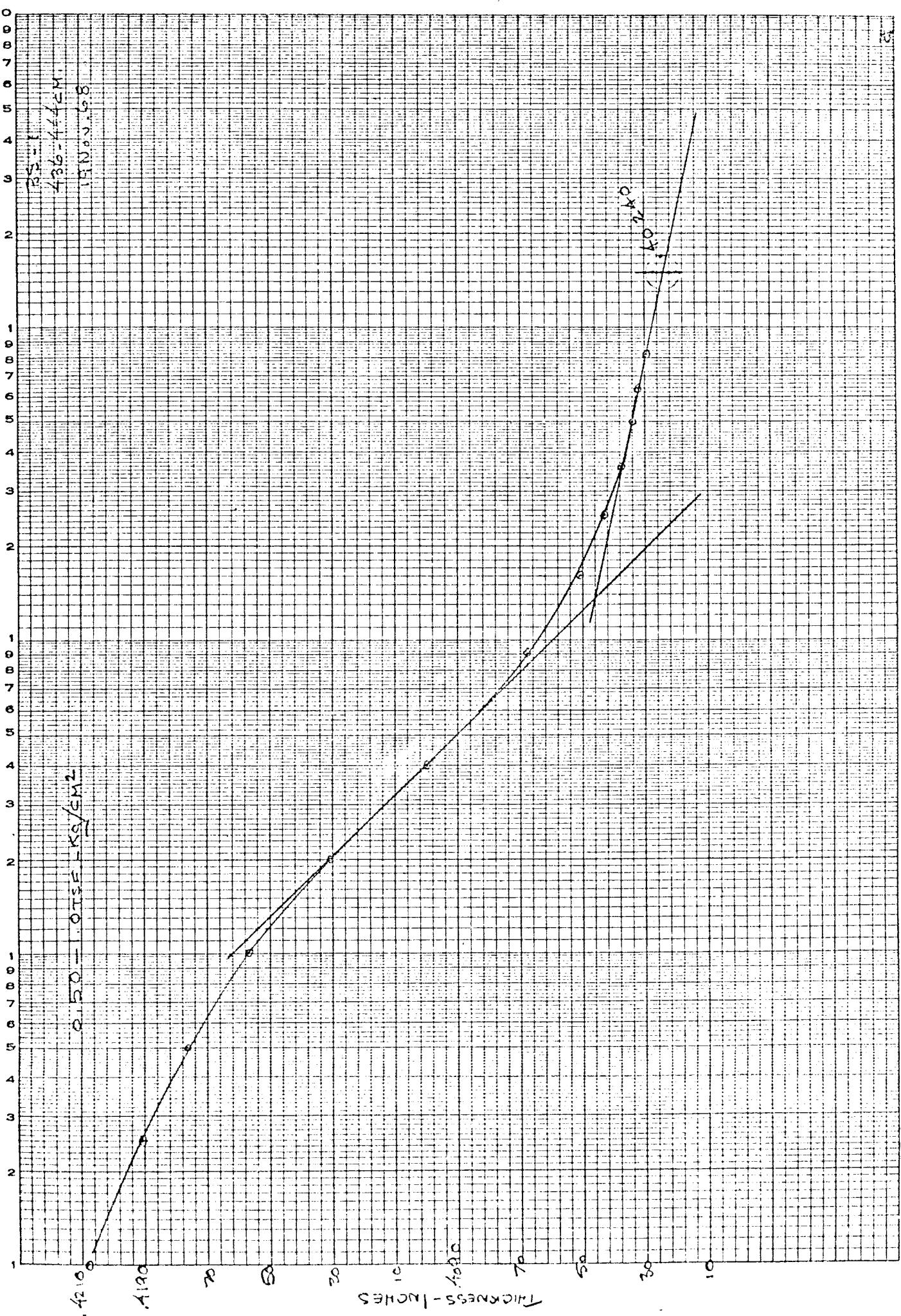
Lake Seneca, New York
SAMPLE BS-1 WATER DEPTH (m) 30.5
DEPTH CM. BELOW FLOOR OF CAGE (436-444)
UNIT WEIGHT (WATER) = 10.69 PCF = 1.712/cm³
% MOISTURE = 51.92 %
SPECIFIC GRAVITY = 2.673
% SATURATION = 100+
ZANADU. SS TEM = 35.9

PRESSURE, TONS / FT² AND KILOM²

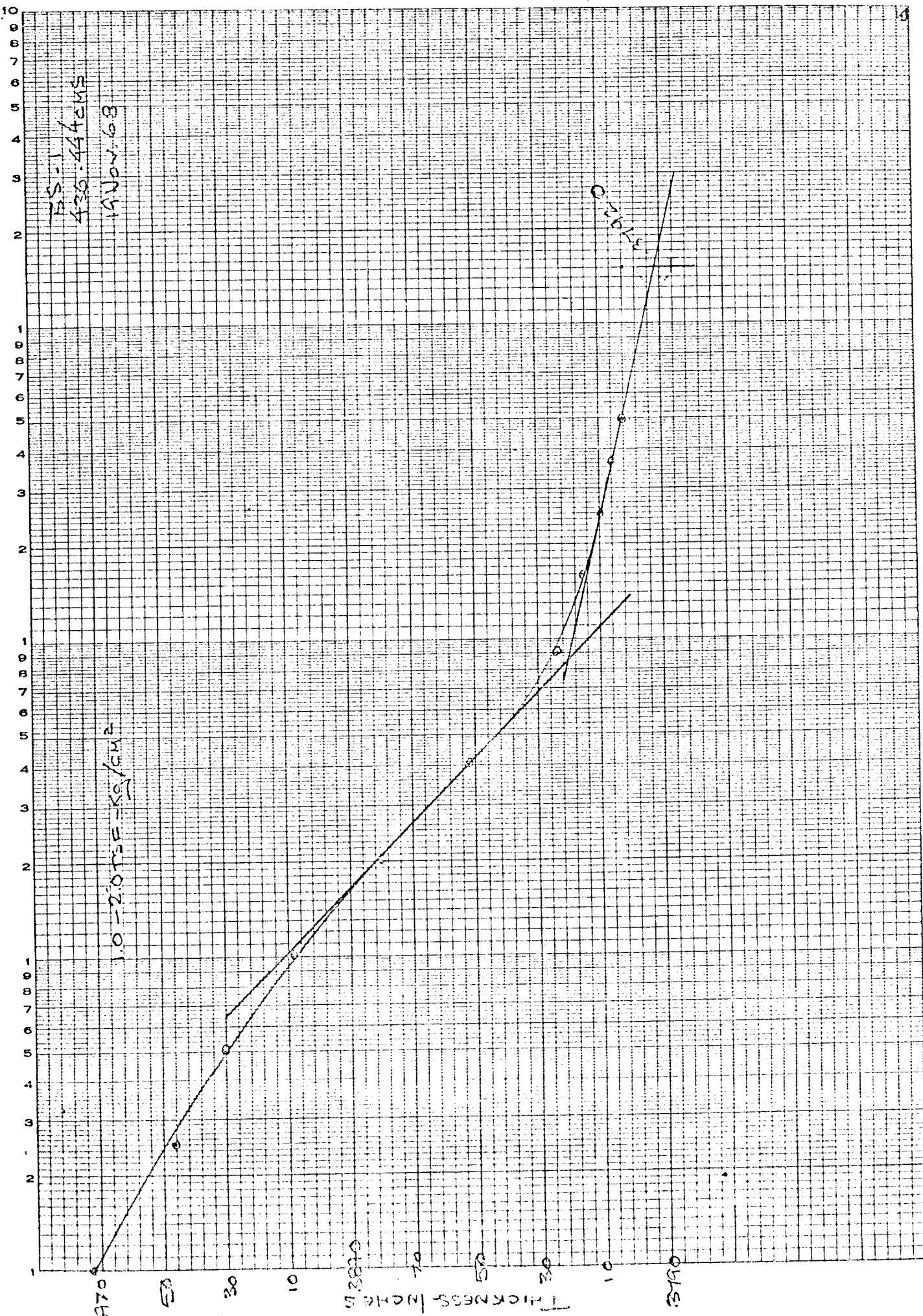
10







TIME - MINUTES



4880

60

10

20

4560

20

4500

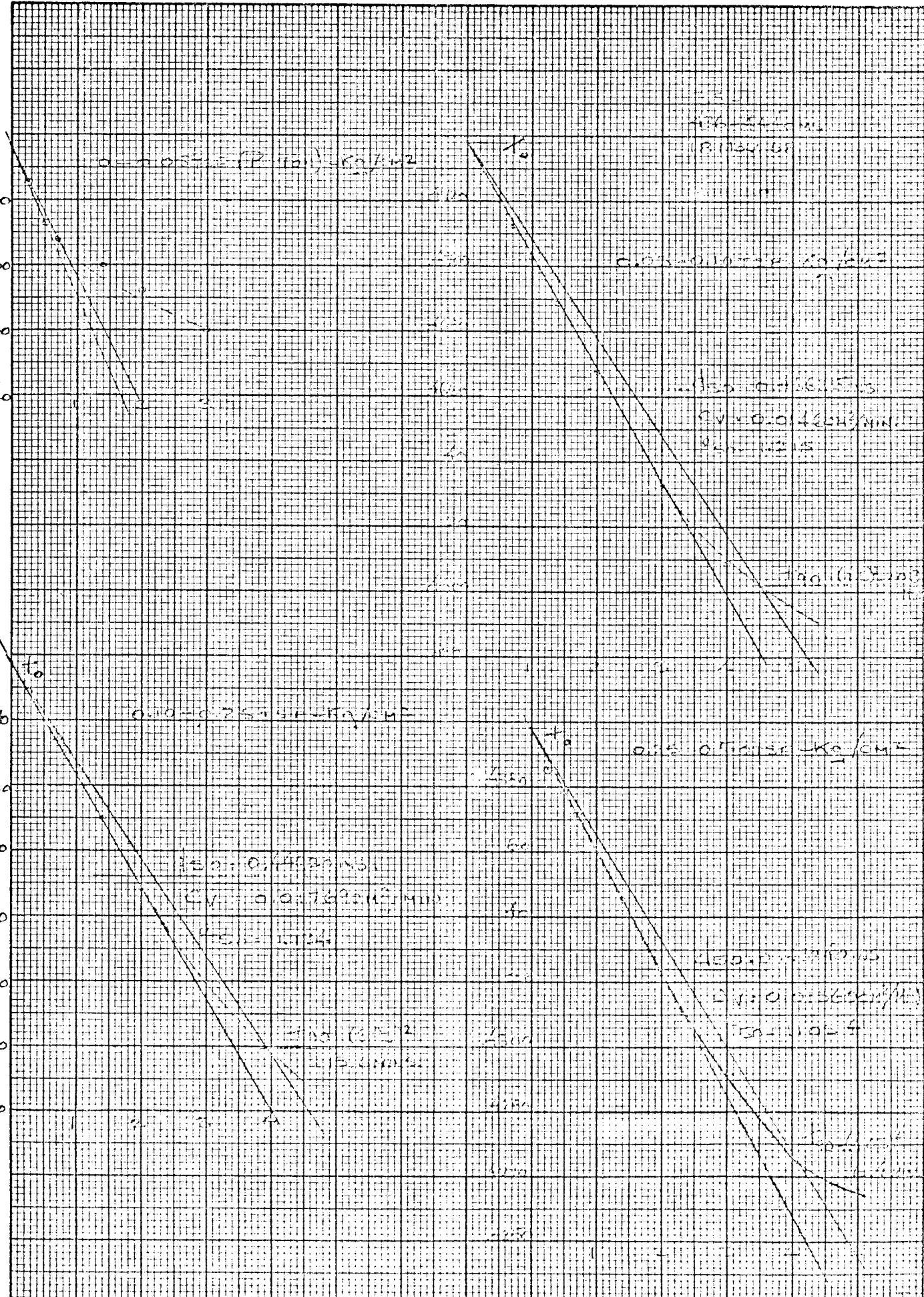
40

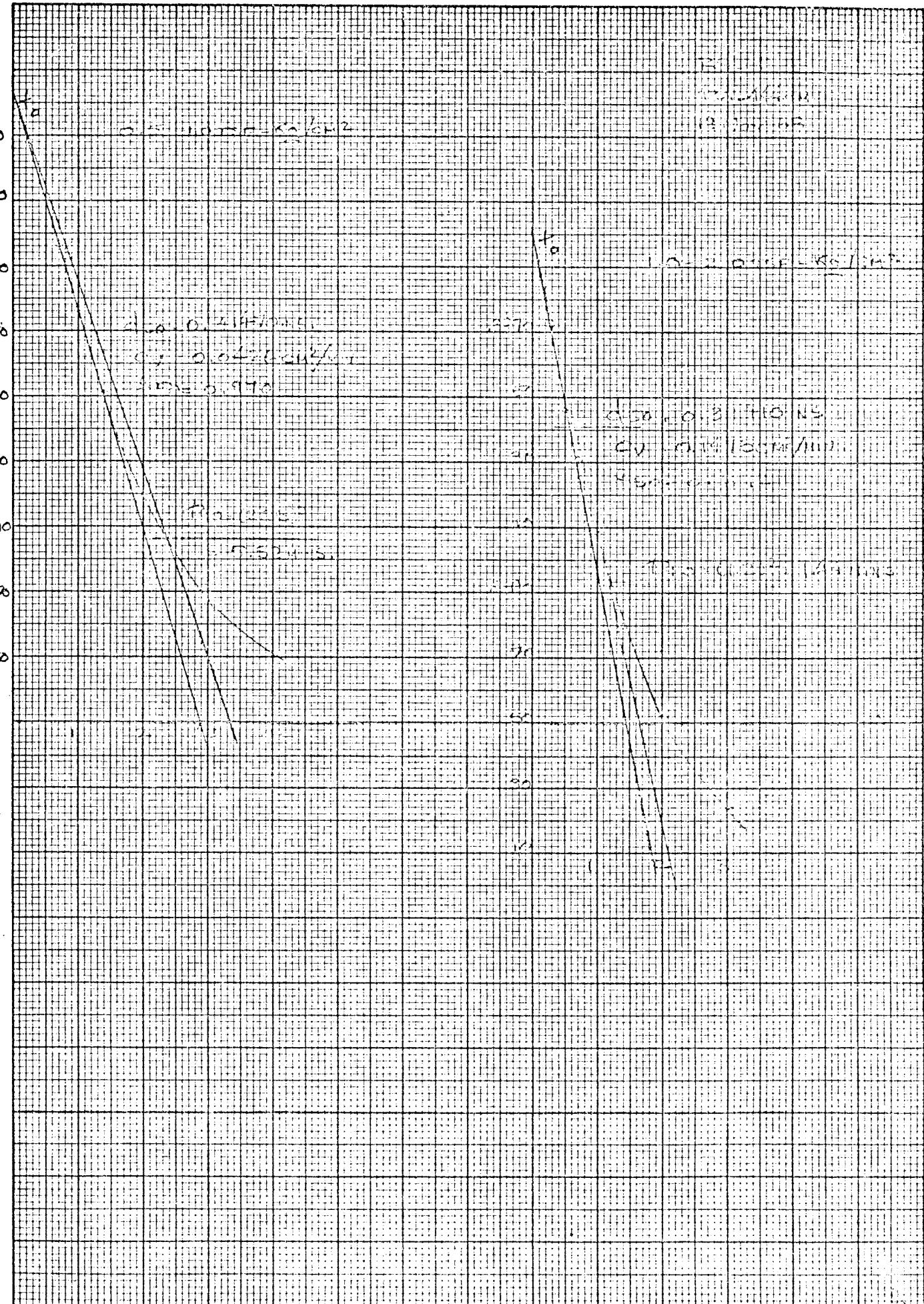
4480

60

40

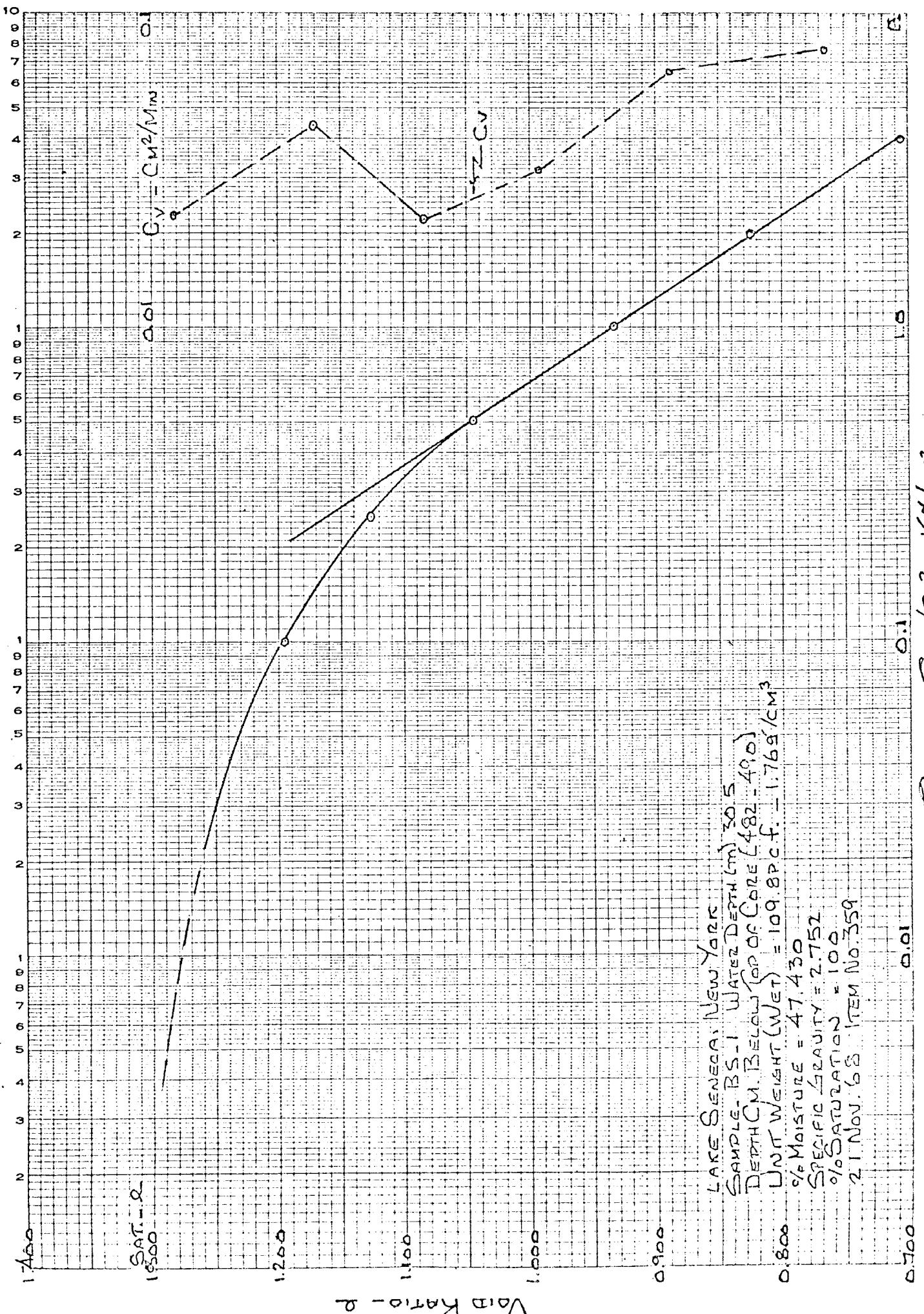
20



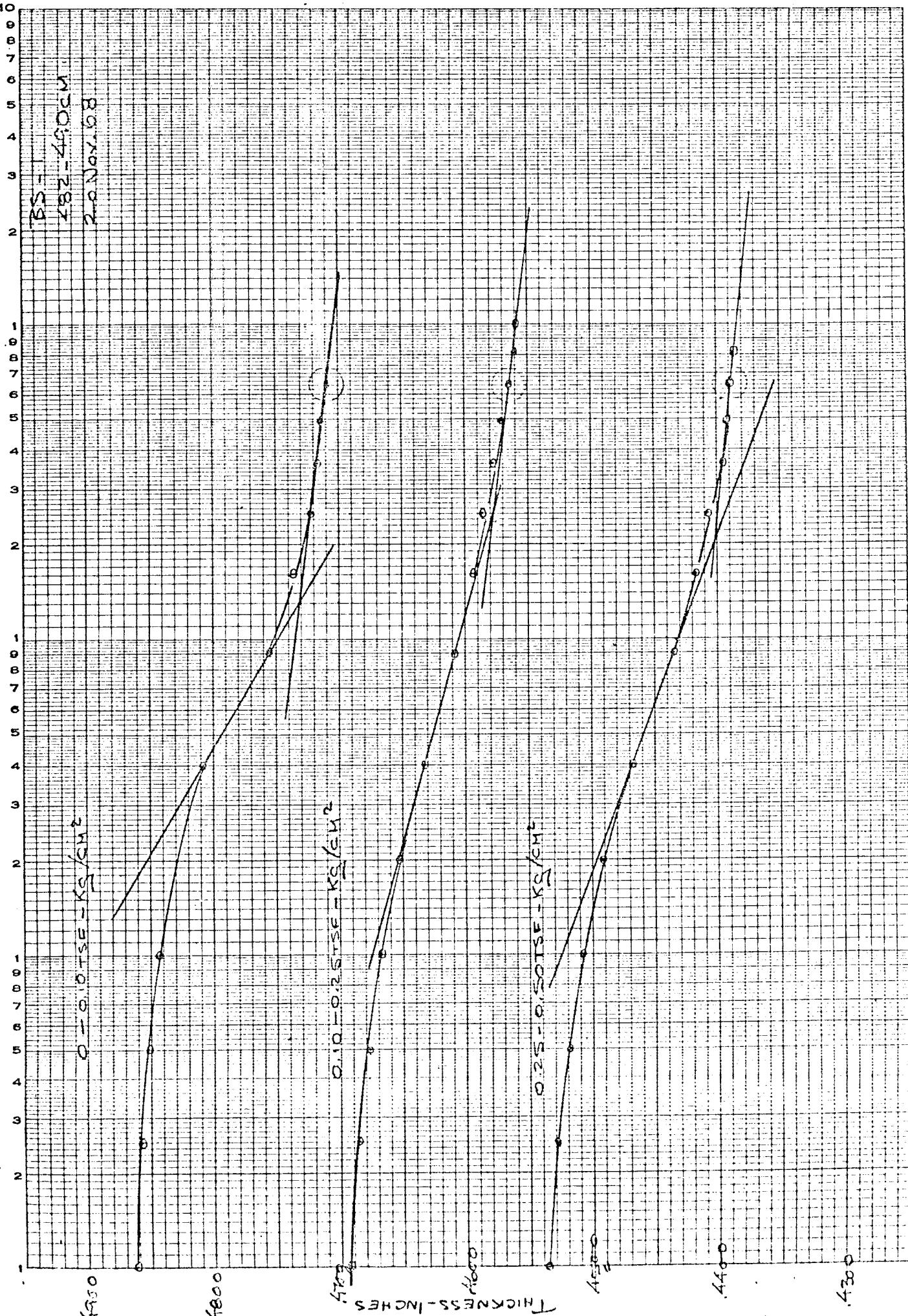


SENECA
MADE IN U.S.A.

LEN 340 LINE DICTYPEN GRAPHS PAPERS
4 CYCLES X 10 DIVISIONS PER INCH



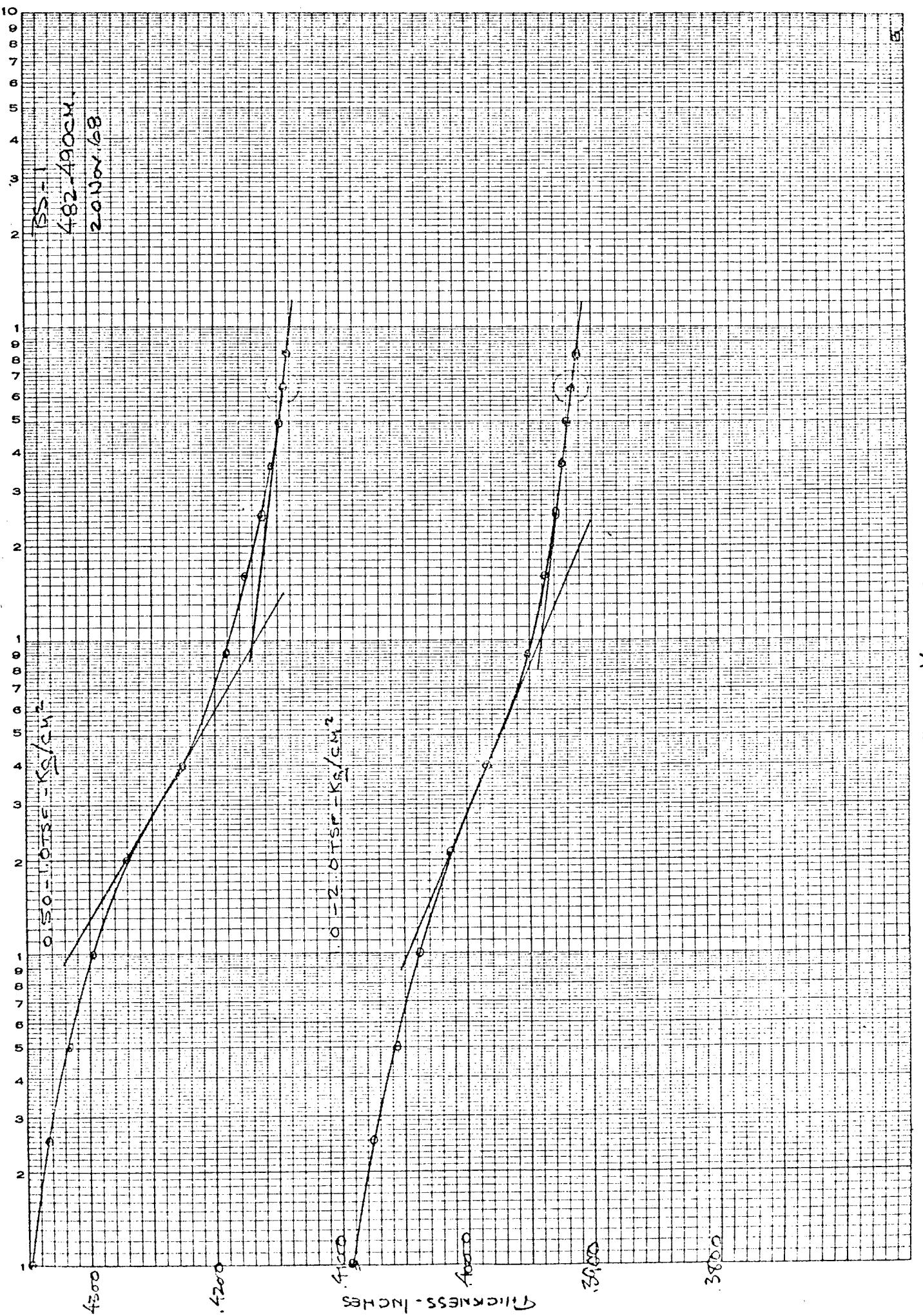
LAKE SENECA, NEW YORK
SAMPLE BS-1 WATER DEPTH (m) 30.5
DEPTH CM. BELOW TOP OF CORE [482 - 49.0]
UNIT WEIGHT (WEIGHT) = 109.87 CF = 1.76 g/cm³
% MOISTURE = 47.430
SPECIFIC GRAVITY = 2.752
% SATURATION = 100
21 NOV. 65 ITEM NO. 359



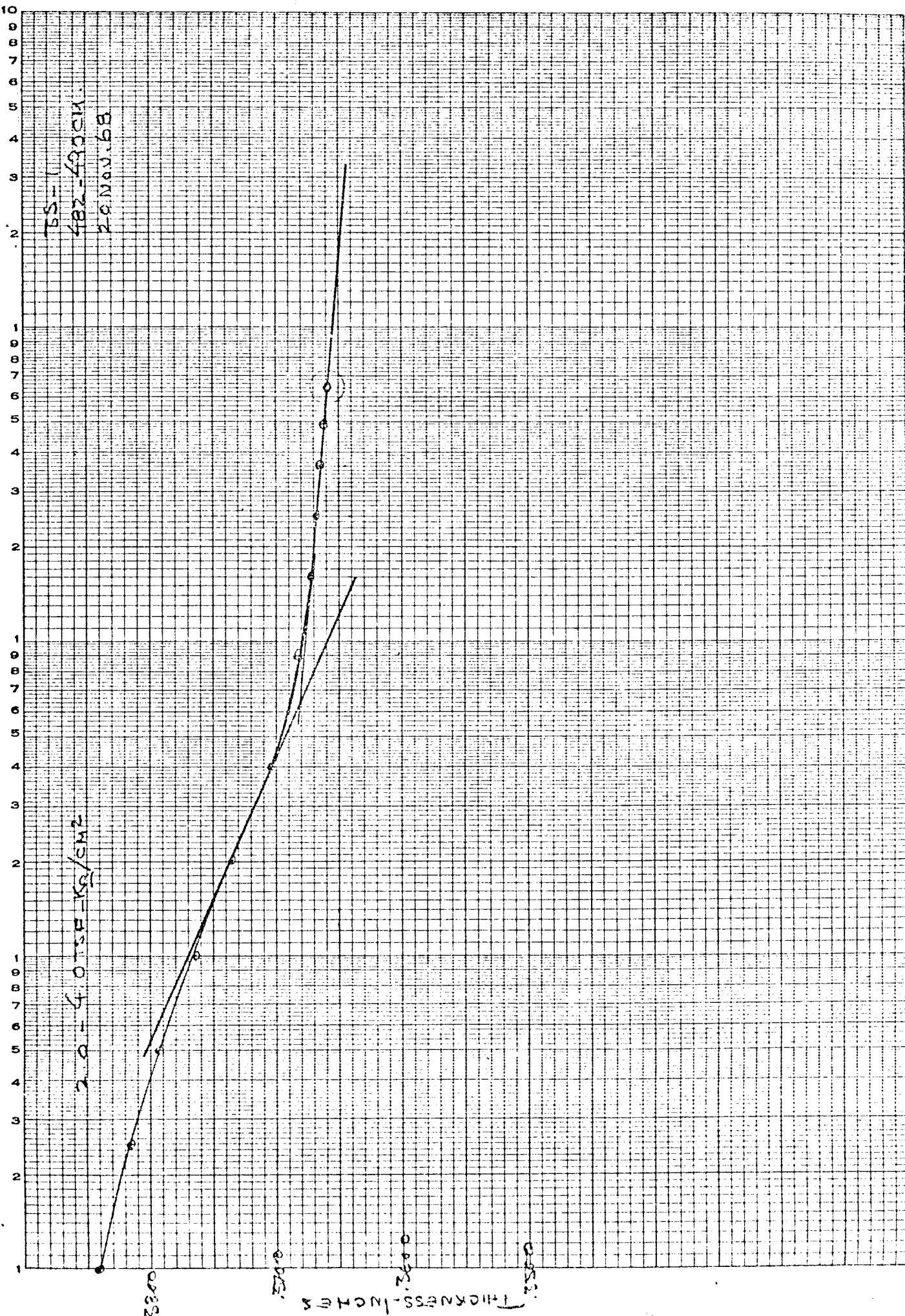
TIME - MINUTES

Fig. 340 - 44C DIASTHEN GRANU PAPER
4 CYCLES X 10 DIVISIONS PER INCH

JEGEN
Maurice U. S. A.

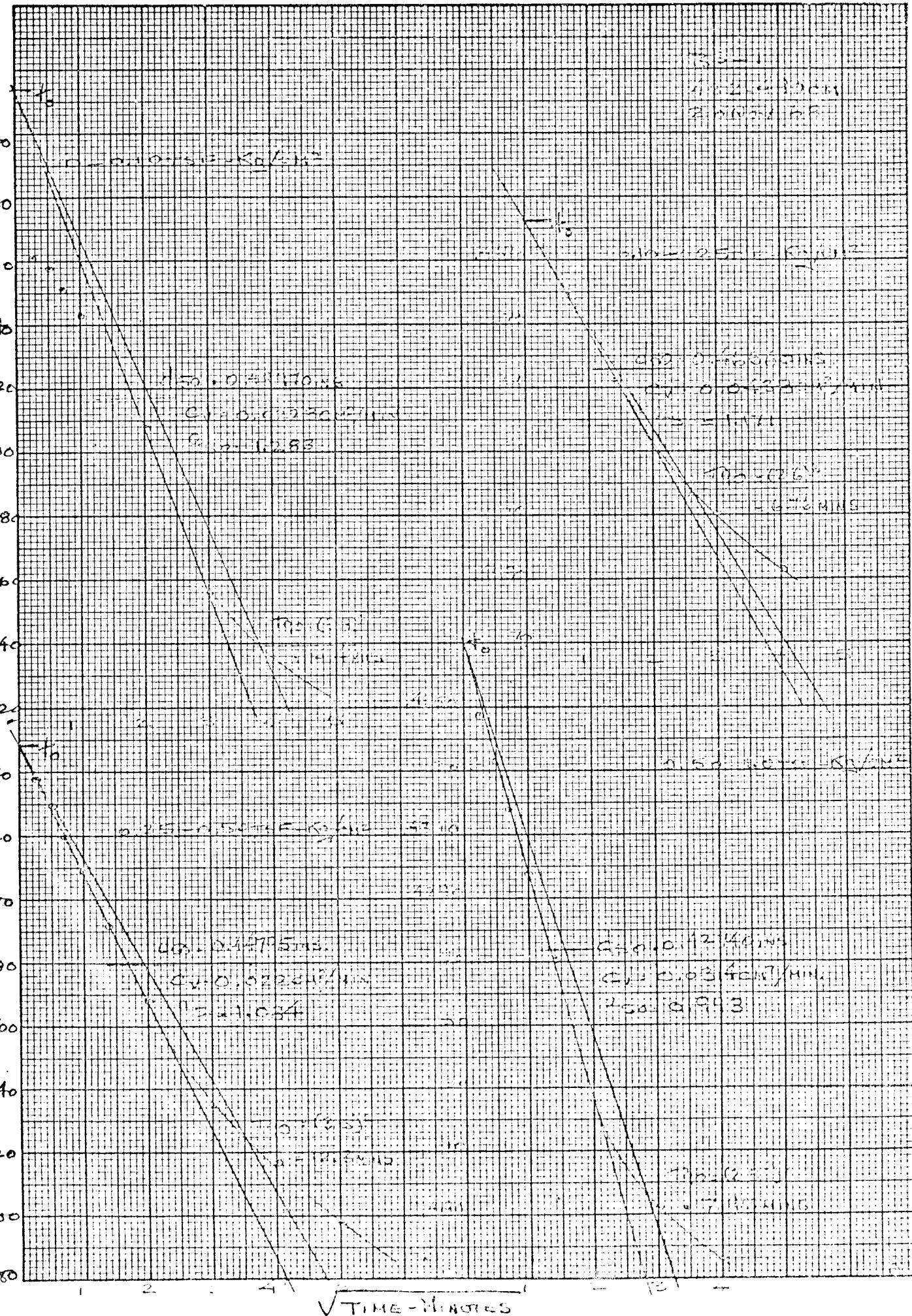


1. 34 10 D SN 6 PAP
2. 2 MI. LOAD/THMIL
4 CYCLES X 10 DIVISIONS PER INCH



10-11 TO THIN - INCH - 9-11
KEUFFEL & ESSER CO. MADE IN U.S.A.

THICKNESS - INCHES



THICKNESS - INCHES

40.90

70

80

30

10

.3990

70

80

30

10

40

20

40

20

40

20

40

20

40

20

40

3.200 0.31825.15

3.150 0.32670.211

3.150 0.31766

3.150 0.31613.5

3.150 0.31561.5

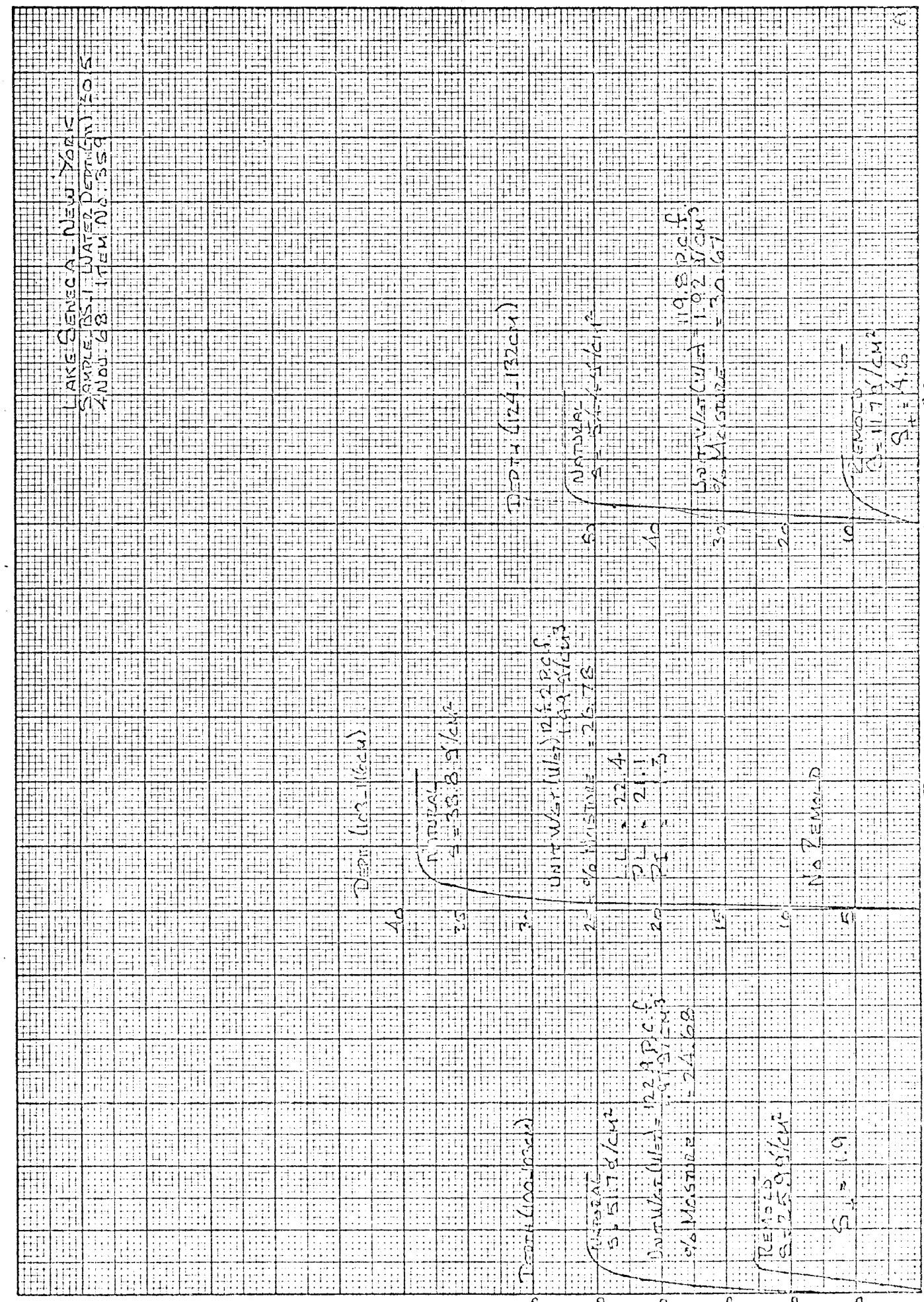
3.150 0.31509.5

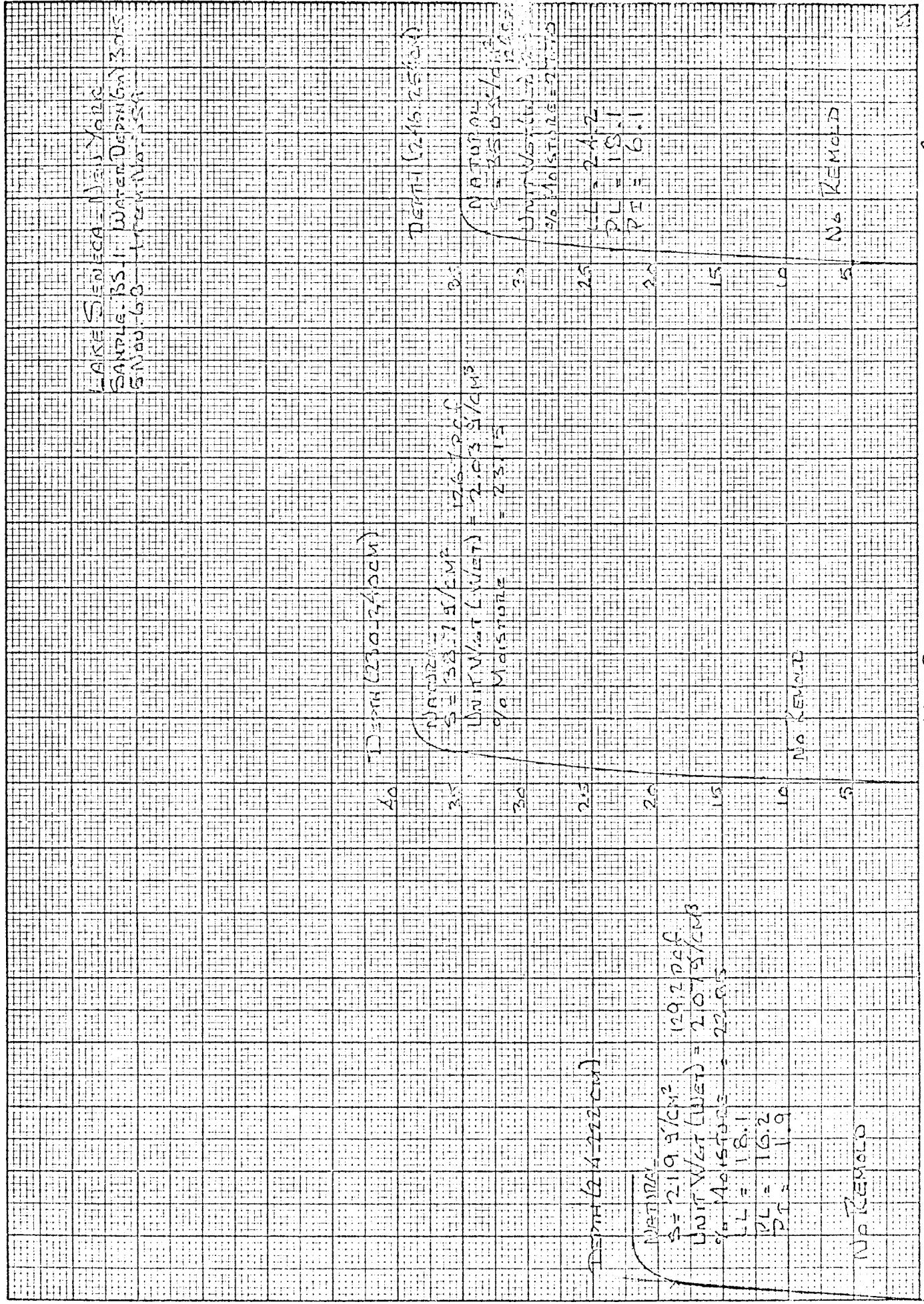
3.150 0.31457.5

3.150 0.31405.5

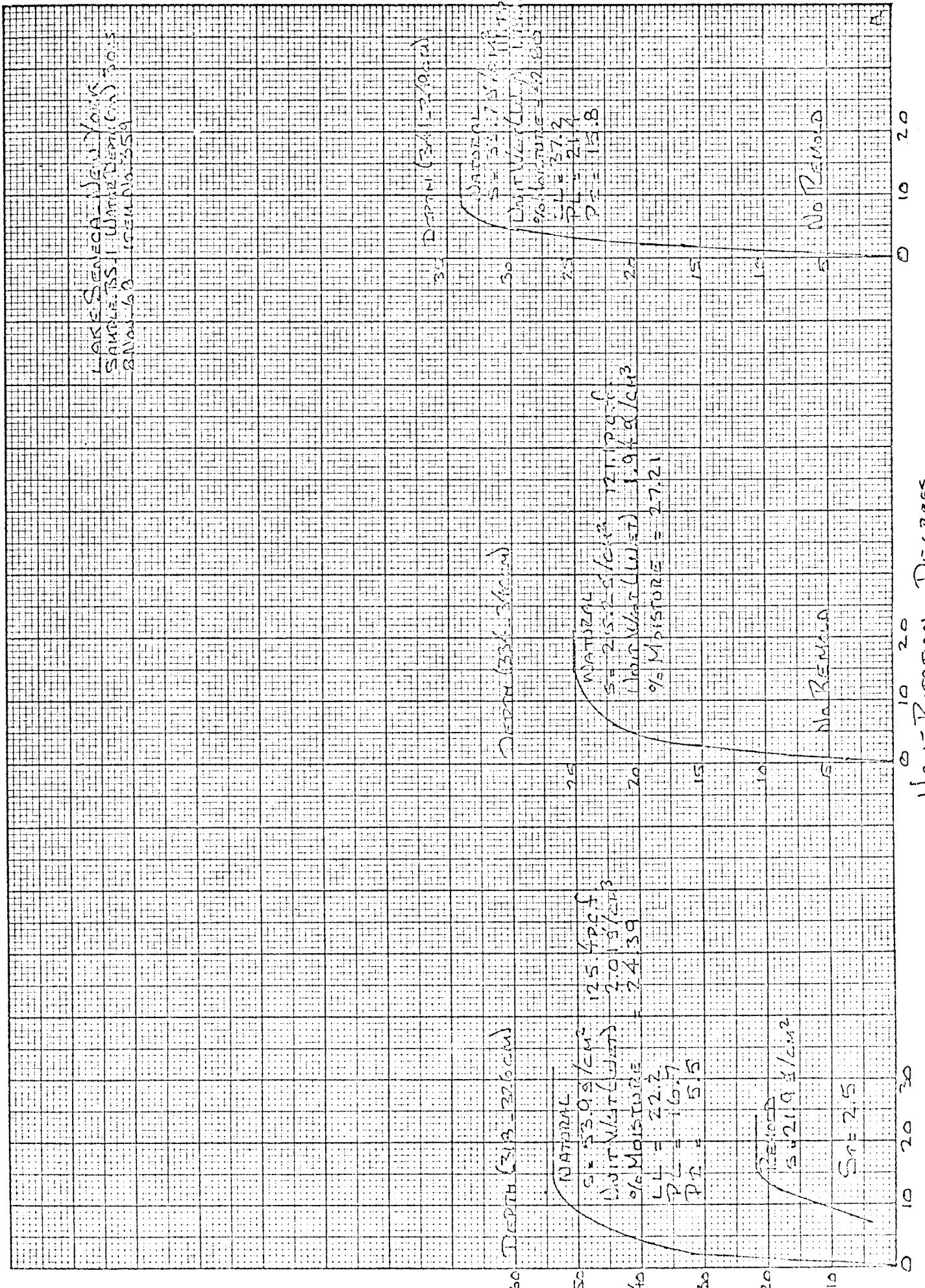
$\sqrt{\text{TIME - MINUTES}}$

LAKE GEORGE
SAMPLE TEST WATER DEMANDS
2 NOV. 63 - ITEM NO. 305





وَالْمُؤْمِنُونَ إِذَا قُرِئُوا إِذَا قُرِئُوا قَالُوا هُنَّا مُؤْمِنُونَ



1995-03-27 15:54:27 HUS

